MEDICAL REVOLUTION

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A PLEA FOR NATIONAL PRESERVATION OF HEALTH BASED UPON THE NATURAL INTERPRETATION OF DISEASE

BY

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TO

THE INTELLIGENT, AND PUZZLED, LAYMAN

TO

MEDICAL OFFICERS OF HEALTH, AND
GENERAL PRACTITIONERS

AND TO

MEDICAL STUDENTS, TO WHOM BELONGS
THE FUTURE OF OUR PROFESSION

PREFACE

Even in such a short and imperfect sketch of medical reform as this is, many details must be introduced that may well seem at first sight somewhat bewildering to the layman. The adjustment of details will occupy much time, and this adjustment belongs exclusively to the profession; but the question whether reform is needed or no, turns on a broad and simple issue that is as comprehensible to the laymen as to the professional man.

When Darwin had finished his marvellous scientific work, he affirmed the natural origin of species; we accept this conclusion without possessing any knowledge of natural history whatever, and why? Because once our eyes are opened we can see for ourselves that his interpretation is in accordance with facts.

The natural interpretation of disease is a corollary of Darwinism; no one denies that occurrences of tuberculosis, plague, scurvy, heat-stroke, are natural processes, that they arise in accordance with the unvarying sequence of cause and effect. The fundamental question at issue between the medical authorities and myself is, whether there is any longer any justification for interpreting some of the processes of disease on an artificial system, now that the natural method based on causation has been recognised. All that has been written here is intended simply to illustrate this central dispute, and to show how prac-

tical results in medicine follow inevitably the theoretical views that dictate them.

There are two reasons, generally quite sufficient, why the regular practitioner should not address the public on professional matters. In the first place, it may lead consciously or unconsciously to advertising; in the second place, it may lure the layman on to morbid self-examination. The first reason does not apply to the retired practitioner. As regards the second, nothing could be further from my intention than to give the layman any encouragement, or even excuse, to enter the slough of despond that belongs to the quack and the self doctorer; I have a firm and conscientious belief that the desertion of the regular profession leads always and inevitably in the wrong direction.

I have felt bound, nevertheless, severely to criticise some of the scientific and practical methods of the regular profession, and to suggest drastic changes. These criticisms and suggestions have been put as shortly and pointedly as possible, so that any one of average intelligence, inside or outside the profession, may follow and judge for himself. Whatever technical matter is introduced is only intended by way of necessary illustration; it is hoped it may prove sufficient, and yet not copious nor obscure enough to bewilder the layman.

It is now nearly forty years since observation from without convinced me that medicine had lagged behind the other sciences in the advance of the Darwinian epoch, and stood therefore in urgent need of revision. So definite was this impression that it was formulated, in speaking to a friend, by saying that the time had come for a physician to put medicine in

order as Darwin had revised natural history. More than thirty-five years of observation and reflection from within have given this impression definite shape.

It is now quite clear to me that medicine is hampered with a false interpretation of the processes of disease, just as natural history was confused, before Darwin's time, by a false interpretation of the origin of species; our undefined diseases seem to me to offer a strict parallel to the specially created species of pre-Darwinian natural history. But there is a difference between medicine and natural history that I was not then in a position to realise: natural history belongs entirely to pure science; the end and object of medicine is practical. Darwin studied for the sake of pure knowledge, however usefully this may be applied by others; the physician's business, although primarily scientific, is to take charge of patients.

When Darwin had overcome professional and theological prejudices, the science books were put in order, and there the matter ended; the mass of humanity remained unconcerned and passive, because Darwinianism did not touch their life directly. Medicine contains a huge personal element that makes the physician's task utterly different. One man put natural history in order in the course of a few years; the work of one man, or of a whole generation of men, will not do so much for medicine; the individual physician can indeed do no more than set up a finger-post to guide those who come after him.

My object, therefore, is to lay bare a false interpretation of Nature that still vitiates the scientific method of medicine; and, further, to show how the adoption of the natural interpretation of disease

would introduce order and uniformity into all our methods, both scientific and practical.

. . . . . .

My thanks, in connection with the production of this book, are due first and foremost to my brother Herbert. But for his comprehension, sympathy, and help—extending over many years—it would probably never have been written. Mr. G. Montagu Harris has also, for several years, given most valuable aid. He has read my work, and has pointed out, as only one of clear and cultivated intelligence could, the difficulties of the layman in face of medical matters. Mr. and Mrs. Sidney Webb have taken a most friendly and active interest in the production of the book. Their help, owing to their unique position in the field of social reform, has been invaluable. When the time came for the final reading of manuscript, and other essential steps towards production, Mr. F. James Matheson, representing Messrs. P. S. King & Son, brought both capacity and enthusiasm to my help. His suggestion, tending towards better English and greater clarity, are scattered all through the book.

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MEDICAL REVOLUTION

I

INTRODUCTORY

THESE introductory remarks are intended to put before the reader the scope and object of this book.

I address myself primarily to the "intelligent layman." Through him, it is my intention to reach the profession. But the profession will not listen, voluntarily, to any one who suggests changes, drastic changes, in professional methods. The failure of attempts to arouse interest inside the profession in medical reform has convinced me of this. That the suggested changes would be disturbing, temporarily, there is no denying; they amount, indeed, to a revolution, but it is a counter-revolution; an attempt to return to the Hippocratic method.

We are concerned with the future of medicine; but our steps must be guided by the light of the past. He who does not know whence we come cannot possibly tell whether our present course be true. It is, therefore, essential in the first place to give a sketch of the history of medicine; the layman must begin by realising the nature of medicine and its mode of development. Having done this, he will be in a position to understand what is said of the pure science of medicine, and the method and aims of those who cultivate it. With a firm grasp of the meaning of the science of medicine, the layman will be able to

realise, as he has certainly never done before, the true relation of theory and practice.

It will be noticed that the constructive part of my work is put first, whereas, in my own progress, destructive criticism naturally came first. The order adopted seems to me more appropriate for the enlightenment of others.

When the reader has obtained a firm hold of the true relation of theory and practice, he will be able to appreciate intelligently the criticisms of the present methods that follow. No one denies that my scheme of medicine is an ideal, the ideal one, that must ultimately be adopted; but the orthodox of to-day maintain that our science must remain amorphous for an indefinite time, before it will be profitable to act fearlessly and found it wholly—as it is already partially founded—on the natural, scientific basis of causation.

But an attack on the orthodox ideas of to-day, and on the relation of theory and practice in vogue, implies an attack on the present system of medical education. This I shall also try to make comprehensible. Finally, destructive criticism reaches the hospital, where the leaders of the profession cultivate their science and their art, untrammelled, to the highest pitch of perfection. Even at the risk of being accused of descending to personalities, it is essential to mention the unpalatable subject of vested interests. Our present system—quite apart from its merits or demerits—produces men who are "highly successful"; they gain honours and rewards just as do the men produced by the great universities, the navy, the army, and so on. Now as long as human nature remains the imperfect thing that we know, so long will these men defend the system that produced them, as it stands.

I can justify myself, with regard to my own profession, by giving a single example that is still susceptible of full substantiation. Lord Lister announced and demonstrated his antiseptic method in 1868; very nearly twenty years later we were still taught in London that "there was nothing in it"; it was also called "a Scotch fad." These opinions were expressed by some of the most eminent surgeons in London. It does not matter a rush whether these men spoke from stupidity or from prejudice, we are only concerned with the historical fact. Antiseptic surgery was an extremely simple matter compared with the medical revolution that it is my duty to preach; it caused no professional upheaval whatever; it had practical results that were obviously and immediately beneficial to patient and surgeon; yet, from professional conservatism, let us say, it was derided and bitterly opposed for many years.

The medical revolution that is coming will be a veritable earthquake amongst vested interests; the masses of the profession will rise enormously in usefulness, in public esteem, in security of livelihood; and many of our rich will be sent empty away. My proposals have been before the profession, at intervals, for twenty years; they have been received in stony silence. If they now gain a hearing I would beg the layman to weigh professional criticism on its merits, not on its professional weight or vehemence.

Up to that point, in my case, where the criticism of the hospital methods ends, the debate is concerning medical affairs as seen from within. When we go beyond the precincts of the hospital, and reach the suggestion for bringing the family physician to the home of those living in the hospital area, we come

upon ground that is common to the medical profession and the social reformer. The ultimate problem for the civilised nation is the preservation of the health of all its component citizens; in other words, the cultivation of the vigour of the muscular system of the national body. Here, therefore, the social reformer and the physician are working for, and under the direction of, the State; for the preservation of the life and health of the people is a recognised duty of the State.

Many people, may, therefore, be tempted to read somewhat cursorily the earlier part of my work, or even think that it might have been omitted. But reflection will, I think, show that it would be useless to suggest great social changes, even on the most tentative scale, without detailing the scientific grounds on which these changes are urged, and the medical reforms without which they cannot be carried out.

The steps through which I have tried to lead the reader's mind towards the adoption of the practical social reforms which are my ultimate objective, are these: the nature and evolution of medicine, the natural interpretation of disease, and the scientific method based thereon; the true relation of theory and practice that goes with genuine diagnosis; the false relation of theory and practice that goes with illusory diagnosis; the bearing of these antagonistic propositions on hospital practice.

Beyond this point, the problem becomes purely practical; the State, the Social Reformer, and the Hospital Physician meet on common ground to fulfil their common duty. But before they get to work they are faced with the question: Is the present hospital method right or wrong? This leads to another question: If

the hospital method is wrong, can it be modified so as to meet the situation?

The nation has become, almost suddenly, alive to the fact that health can only be preserved by the prevention of disease. The efforts that are being made in this direction are splendid; they were represented in the Conference of Health-Promoting Institutions recently held in London. The Lord Mayor, in opening the proceedings, stated admirably the reason of the creation of all these societies. He said: "It is a striking feature of the development of modern medical science that it has divided itself into two great branches of study and practice, which severally relate to the *curative* and the *preventive* sides of the subject." The hospitals and the schools with physicians, surgeons, specialists, and general practitioners, the Poor Law infirmaries, and the Poor Law medical officers are concerned with cure, and solely with cure; while the medical officer of health, aided by lay helpers, is concerned with prevention.

This is the crux of the whole problem; the overwhelming majority of the profession do not concern themselves with prevention, while the intelligent public has grasped the fact that without prevention medicine is robbed of more than half of its rightful inheritance. My task is, on the one hand, to persuade the profession to make the whole science and art of medicine primarily preventive; and, on the other hand, to convince the public that the study and management of disease belong exclusively to the trained physician and the trained nurse, however large and beneficent a part the laity may play in social service amongst the sick and destitute.

Finally, what I advocate is, first of all an exhaus-

tive inquiry, by Royal Commission, into our present hospital method as applied to the preservation of the health of the people. This inquiry should embrace every subject touched on in this book. If such an inquiry were to result as I anticipate, it would be followed by medical reform, beginning at and radiating from the hospital.

II

THE EVOLUTION OF MEDICINE

At the very outset, the reader must be reminded that medicine consists of two wholly distinct parts; it includes a pure science and an applied science, or scientific art. The fact that the physician [1] is scientist and practitioner in one has led to much confusion, even inside the profession; it is well, therefore, to draw a parallel. Navigation is an art, a scientific art; it is founded on pure science, on astronomy. The sailor who guides his ship to the Antipodes uses astronomical knowledge in just the same way as the physician uses pure science when he vaccinates against smallpox or typhoid fever. Science has been well described as organised knowledge of Nature, and of this great whole, medical science is a branch; it is our organised knowledge of human disease. One of the leaders of English medicine has described my work as, "a bold attempt to make of medicine an exact science," and has condemned it accordingly; because medical science is not supposed to have any claim to rank among the exact sciences.

With all due deference, I must protest that this statement represents a certain confusion of mind, a tendency to confound natural phenomena with our attempts to interpret and record them. There is, ac-

[1] As a distinguished physician has said: "It is time to discard that mongrel word 'doctor' and to restore the good old English word 'physician.'"

cording to the theory on which I work, no more inexactness or uncertainty in the occurrence of the processes of disease than there is in the genesis of those other processes that go to make up the province of the astronomer, the chemist, or the engineer. But our observation and records of any of these processes can never be free from inexactness; medical science, a record of natural processes, is just as exact as we can make it, so is the science of astronomy or of chemistry.

The territory of Nature has been more or less arbitrarily divided into provinces, and each province has been allotted to a body of scientists for special study; the processes of disease form one of these; the same limitations hold for the physician as for his brother scientists, but he is not separated from them by any natural division; we all reach broad truths, but the details of astronomy and of chemistry are no more exact than are the details of medical science. Not unless Nature became her own recorder should we reach exact science, and then it would be comprehensive as well as exact.

The question whether the supernatural enters into the causation of disease is not for argument; it is part of the greater question that was, for scientific purposes, settled in the last century. When Darwin affirmed the natural origin of species and the evolutionary descent of man, he said that the truth or falsehood of his theory could not be settled by argument, that the decision must rest on observation of Nature. The natural origin of disease processes is the axiom on which rests all that is here to be said, and this is claimed as a plain corollary of the Darwinian theory. If man is subject as to his origin and condition to

the same invariable sequence of cause and effect as rules elsewhere in Nature, then so also are all those phenomena that go to make up human disease. There is no room for argument on the subject, nor for compromise; some minds postulate supernatural interference, some do not; I proceed on the theory that the processes of human disease occur in accordance with the natural, invariable sequence of cause and effect.

Its two component parts must thus be borne separately in mind while glancing at the evolution of medicine. It is at once evident that the art is much the older of the two; the beginning of the art of medicine, indeed, takes us back far beyond the origin of the human race; for there is no difficulty in discovering attempt amongst the lower animals to escape the pains and penalties of disease. And amongst primitive men, medicine is represented by efforts to escape disease that are almost unreasoning. Pure science, organised knowledge of disease, cannot be said to exist as a foundation of primitive medicine. Just as there is no line to be drawn between the nebular state of our system and the highly differentiated condition of matter as we now know it, so is there no difference, but one of degree, between the nest-building art of the earthworm and our highly elaborated art of medicine; "art is but a part of Nature." The worm knows, when the autumn comes and the leaves fall, that he must build his nest at a certain depth and in a certain way to escape the winter cold; he also knows that he must grasp the leaf by a certain part in order that it may be easily pulled into the earth. There is much knowledge at the back of this art of building; it is not organised, it is not science, but such are the

beginnings from which our wonderful science has been evolved.

As the higher reason that belongs to man developed, his primitive medical art was gradually fortified by observation; these observations were slowly systematised, and then recorded; our organised knowledge of human disease began to grow; the pure science of medicine was born of the older art. The evolution of medicine has not advanced with an even front, as the tide mounts the level beach, far from it; and so, in some backwaters we can still see for ourselves today what the medicine must have been like that antedated the science and art of Hippocrates, in the direct line, by ages. Any one wishing to read the history of medicine nowadays must begin with the lucid accounts that have recently appeared of its practice amongst the Australian aborigines, in Tibet, and elsewhere.

Those who, like myself, have listened to the Australian describing, with palpable sincerity, the descent of his deity, more than half-demon, to snatch up to a giddy height in mid-air the candidate who is to be admitted D.D. and M.D. in one, cannot fail to realise the meaning of primitive medicine. Its science is a branch of theology; its art consists, essentially, in attempts to control the cause of disease through propitiation of the deity. All the essentials of both our science and our art are there represented. The ultimate desire of all men is the preservation of health, the prevention of disease; the only possible way to accomplish this is by controlling the cause; the aboriginal ascribes disease, just as he ascribes drought, hurricane, eclipse and flood, to the interference of a supernatural power which he seeks to propitiate, because in his ignorance he cannot hope to control it.

Man has been eloquently described as "Nature comprehending herself"; the medical man, at least, has had to pass through a stage when he could be only truthfully described as Nature misunderstanding herself.

The only great epoch in the history of medicine occurred when it was clearly asserted that the processes of disease were of natural, and not of supernatural, origin; it is connected with the name of Hippocrates; it marks the beginning of the end of the domination of the theological school in medicine. When Hippocrates said that the physician is but the servant of Nature, he looked, as only men of genius can, from the mountain top, he discerned an ultimate truth. We are taught in this masterly phrase that only in the light of a full knowledge of their causation can we hope to guide and control the processes of disease, and for the reason that they are natural processes. Thus was the natural interpretation of disease established once for all as the true ideal of medical science, as the true foundation of all medicine.

How far the science and art of Hippocrates fell short of this ideal we do not know; for although the fantastic Humoral Pathology, that served so long as the orthodox science of medicine, is ascribed to him, there can be no doubt that it gathered many incrustations for which he was never responsible. Whatever the intervening details may be, the fact remains that Hippocrates spoke from the inspiration of genius; but the common mind will not, cannot accept the dictates of genius; common belief must rest on common experience; and so, the profession has been toiling ever since through the flat of detailed observation, until at last we are face to face with facts, now fully sub-

stantiated, that Hippocrates realised nearly two thousand five hundred years ago.

Medicine reached very nearly its high-water mark for the period of the older civilisation in ancient Greece; and then, with the destruction of order and stability, came the great gap of the Dark Ages. When security began to reappear in Western Europe, and men could turn their thoughts again to science, the Humoral Pathology was adopted in medicine and kept the field, at least nominally, until nearly the middle of the last century. When the time was ripe for its destruction, the task was undertaken and completely accomplished by the great German anatomist Virchow. When Virchow had destroyed the Humoral Pathology, he set up his Cellular Pathology in its place and described it as the true science of medicine. This brings us down to our own time, for "Pathology" is still authoritatively held to be the scientific basis of medicine.

What it is intended to impress on the reader by this reference to the evolution of medicine is this: the art of medicine has its origin in Nature, even before the appearance of man on the earth, in the instinctive, unreasoning efforts of the lower animals to escape the inconveniences of disease. With the evolution of the higher reason that belongs to man, and the consequent development of the habit of intelligent observation, the science of medicine was grafted upon, sprang from this primeval art. At a much later date came the dawn of our own time, when disease was ascribed to natural causes, and when the study of Nature was pointed out as the only basis on which the art of medicine could be securely founded. The greatest scientific advance of all time occurred in the

last century, when Darwin threw natural history into the crucible; but medicine was then still too completely under the domination of an artificial system to share in the purification that followed. As far as Virchow and his "Pathology" are concerned, Darwin might as well have been silent; medicine was not then truly recognised as a branch of natural history.

III

THE PURE SCIENCE OF MEDICINE

The structure that we call medicine consists of two parts; the foundation is a branch of pure science, part of our organised knowledge of Nature; the superstructure is a scientific art. For the moment, we are concerned only with pure science. It is essential to grasp clearly at the outset how the word "disease" is used in medical science. This word is used in two wholly different senses, and much confusion arises from a very general failure to understand this.

When we say: Disease is a calamity.; the first use of the word is illustrated. Here "disease" stands simply for the negation of health; when health is deficient disease arises. Health may be taken to mean the condition associated with a normal, or wholly desirable state of existence. Our conception of "disease" in this general, negative sense, corresponds precisely with our conception of cold as the negation of heat. Health and heat are positive conceptions, disease and cold are their negations.

When, on the other hand, we say: The disease from which these people are suffering is microbic in origin, the particular, positive use of the word is exemplified. When an immense number of cases have been investigated, and it has been found that a certain microbe is actively parasitic in every case, these patients are said to be all suffering from the same

"disease." From a number of cases in which we observe a series of symptom-groups of determinate and similar causation, we are enabled to draw a mental conception that stands for "a disease."

A caution must be given here. When it is said, for instance, that a patient is suffering from typhoid fever, it is meant, literally, that he is suffering from *an attack* of typhoid fever. There is a great tendency, even inside the profession, to overlook the obvious distinction between the actual attack and the mental conception—"the disease"—that is derived from the observation of a series of attacks. It must also be pointed out that when the specific cause of the symptoms present has been determined, the whole problem of causation is not thereby solved.

When, for instance, it was discovered that the symptoms called malarial were caused by the parasitism of a certain protozoon, it became possible for the first time to define accurately "the disease malaria." But the observers recognised at once that until they had discovered all the conditions immediately antecedent and leading to each particular attack, their scientific task was not completed. This rule applies universally; no symptom-group has been fully interpreted until both the specific cause and the conditions leading to the attack have been laid bare. But, be it noted, in framing our conception of the specific disease, account is taken only of the specific cause; the conditions leading to the attack are neglected. These two factors in causation are the "exciting and predisposing causes" of medical writers. This misuse of the word "cause" still leads to much misunderstanding.

The specific causes that lie at the basis of the

scientific—the natural—definition and classification of diseases fall into two primary divisions; those of one division arise in the environment of the patient, those of the other originate in his constitution. The causes of extrinsic origin fall again into three main groups, under the headings of parasitism, poisoning, and traumatism. Typhoid fever, lead-poisoning, and heat-stroke are respectively examples from each of these groups. The diseases of extrinsic causation are so universally recognised that they need not be more particularly referred to.

But the diseases of intrinsic causation, in attacks of which the cause arises in the patient's constitution, are not officially recognised and must be described. The individual begins his separate existence with a number of inherited characters, and these characters carry with them certain tendencies. Both characters and tendencies become modified through contact with environment. It is, therefore, evident that we have to deal with a variable quantity. But the constitution may be roughly described as the intrinsic tendencies of the individual at the time of observation.

The diseases of intrinsic causation fall into five main groups, thus—

I. Certain children are born in whom the development of the heart is incomplete; the observation of a long series of such cases clearly leads to the conception of "a disease." We have a series of cases presenting symptom-groups of determinate and similar causation. But the cause is not to be found in the child's environment, therefore it must be sought in the constitution; it is intrinsic in origin. The cause in all these cases is, in fact, incomplete development.

As in the case of diseases of extrinsic causation, so

here, it must be recognised that the determination of the cause of the symptom-group does not complete the solution of the whole problem of causation. The conditions leading to the individual attack clearly go back beyond the child's separate existence; they must be sought in heredity. Heredity is the channel through which this cause of disease has reached the child, and our study of the child, and of its disease, is not complete until we understand its family history.

II. Other children are born, apparently, quite healthy, but despite the best possible hygienic surroundings, they sicken and die, perhaps at at the age of three, with symptoms called diabetic. Again, the cause of these symptoms does not arise in the environment, it is intrinsic in origin, it is a constitutional defect; received again through the channel of heredity. There are many other diseases of a similar nature.

III. What is and what is not overwork must ultimately be decided in accordance with an arbitrary standard, and the standard will vary for different individuals. But it is quite clear that overwork is a prolific cause of disease. It is also true that the symptoms are definitely recognisable, they are susceptible of systematic record. This is all that it is necessary to insist on here.

IV. On the other hand, health cannot be maintained in idleness; in other words, deficient work is a cause of disease. Again, of course, the amount of work, and the proportion of mental and bodily work, that conduces to health must be fixed arbitrarily for each individual. But the urgent necessity of ascribing the symptoms that arise in idle people to deficient work, and the duty of systematising our knowledge

of the subject, are obvious and need not be insisted on further.

V. Finally, a man may enjoy good health for many years, and although continuing to live under ideal conditions, there will come a time when simple wear and tear bring his life to a close. We may hesitate to call the natural degenerations of old age symptoms of disease, but the fact remains that arteries grow hard, muscles waste, even bones, sight and hearing fail, health disappears, and its negation is disease. All that I wish to insist on now is that the symptoms of wear and tear must be systematised and set down for the guidance of the profession.

There is, in fact, no generic difference between attacks of disease due to intrinsic and those due to extrinsic causes; in both cases we find series of cases that exhibit symptom-groups of determinate and similar causation; therefore, the conception of "a disease" of intrinsic causation is no whit less definite and useful than the conception of "a disease" of extrinsic causation. Before the causation of an attack due to an intrinsic cause can be said to be fully elucidated, it is essential that the conditions leading to the attack be cleared up; the determination of the specific causes is not sufficient.

This is not the place, nor am I competent, to discuss the relation that heredity bears to the constitution, but it is nothing less than a scandal that the student passes through his whole course without ever having his attention specially drawn to the part played by heredity in the causation of disease. The medical profession has no right to stand idly by and to accept theories, and even dogmas, from students of heredity; we are concerned with the effects of heredity as they

are presented to us clinically, that is, at the bedside, in practice; no one, statistician, biometrician, nor Mendelian, can solve our problems for us.

It must be pointed out that, not only do the causes of a vast number of attacks of disease originate in the constitution, but it profoundly modifies in each patient the character of attacks of which the cause is extrinsic. It is no exaggeration to say that the recognition of the constitution as a factor in the causation of disease will necessitate an entire rearrangement of our science, the rewriting of medical text-books.

The reader cannot yet fully appreciate the significance of the statement, but it must be emphasised here that, while the intrinsic causes of disease remain unrecognised more than half of the pure science of medicine must remain unsystematised. The layman can hardly realise, but he may surmise how far-reaching is the paralysing effect of this lack of scientific method. But I would beg him to bear the point in mind while reading subsequent chapters.

My only object at present is to give the reader, especially the layman, a definite idea of what is aimed at by those who cultivate the pure science of medicine, and of the methods they use; probably this end has now been attained. What has been written may be very briefly summed up. "Disease"—lack of health—arises in consequence of the occurrence of certain natural processes; to observe and record these processes is the scientific duty of the physician. Experience has shown that this vast array of natural processes falls into divisions, groups, and sub-groups, until we reach ultimate sub-divisions in each of which all the processes are of determinate and similar causation. From each of these ultimate subdivisions—represent-

ing a series of attacks—we draw a mental conception and call it " a disease." This bird's-eye view of the results obtained in the pure science of medicine may be put diagrammatically in the form of a chart.

The definition of the meaning of " a disease " given above, although implied in the recognition of, for instance, typhoid fever as a true disease, has never, so far as I know, been previously formulated. And the recognition of the causes of disease of intrinsic origin—with the consequent recognition of diseases of intrinsic causation—is a new departure. These are the two points on which the validity of both my constructive work and my destructive criticism ultimately depend. I shall, therefore, state and answer the only criticism to which these ideas have been subjected in the profession.

I have often been told, more especially by teachers of medicine, that the demand for the defining of the meaning of " a disease " represents an unpractical fad. Again, I am told that to determine, in any particular case, that the cause of symptoms arises in the constitution is of no practical value. I shall illustrate the fallacy of these two orthodox contentions by referring to a problem that is much in the public eye at present, the cancer problem.

In the first place, it is quite evident to the onlooker that those who are investigating this problem have not any clear idea of what they are seeking. They have set out to track down " the disease " cancer, without first attaching a definite meaning to " the disease." They do not realise that " the disease " is not lurking in every case, but that it is a clear mental conception that can be framed only when a series of symptom-

groups of determinate and similar causation has been observed.

In the second place, using the word "cancer" in its proper, comprehensive sense, all cases have one fundamental character in common; that is, certain cells take on an abnormal manner of multiplication, leading to overgrowth, recurrence, malignancy. This abnormal activity can only be accounted for by the action of some intrinsic cause, some dislocation, temporary or permanent, of the normal tendencies of the patient. Various antecedent conditions may lead up to the constitutional dislocation, as for instance, chronic irritation; but the "cause" of the abnormal cell-growth must be sought in the constitution. Cancer, being of intrinsic causation, will prove ultimately to be "a disease" that is not sharply or definitely bounded; it will be indefinitely and arbitrarily divided from other conceptions.

I venture, therefore, to state dogmatically that until two essential conditions are complied with, the cancer problem cannot be finally solved. These two conditions are, the defining of the meaning of "the disease," and the recognition of the reality of constitutional causes of disease. I would only add that—in medicine at least—we cannot be practical, usefully, until we have first been truly scientific.

It must be explained what the chart appended to this chapter is and is not intended to be. In the first place, it is an outline only, but as an outline I venture to claim that it is permanent. It is put in, in order to bring graphically to the reader's mind the fact that the science of medicine has now entered on its final phase. When Hippocrates said "follow Nature" he meant that we should adopt, wholly and candidly, the

natural interpretation of disease. Now, the natural interpretation of disease consists simply in systematising all our experiences of the processes of disease on the basis of natural causation. I have shown how this may be done, in this chapter; I shall have to show in some detail in subsequent chapters that it is not done, not uniformly or completely at present. Should the reader become somewhat bewildered amongst my "spurious diseases," I would ask him to turn back to this chart so as to realise that in knowing what is "a disease" he must know also, if he will take the trouble, what is not "a disease."

On the other hand, it need hardly be said that this chart is to a certain extent diagrammatic; that it is incomplete and tentative in detail; it is only an outline, but as an outline it is permanent; it is founded upon a principle which I hold to be immutable. There is no attempt whatever made to represent the complexities that will arise when the task of definition and classification is seriously undertaken by an organised and scientifically led profession.

INTRINSIC CAUSES

Incomplete Development.	Constitutional Defects.	Overwork.
Hare-lip, cleft-palate, spina bifida, congenital heart defects, idiocy.	Diabetes, asthma, chorea, gout, hysteria, insanity.	Various forms of breakdown, mental and bodily.

Deficient Work.	Wear and Tear.
Obesity, hysterical attacks, general debility.	Hard arteries, wasted bones and muscles, defective sight, hearing, etc.

EXTRINSIC CAUSES

Parasitism.	Poisoning.	Traumatism.
Tuberculosis, typhoid fever, plague, cholera, malaria, sleeping sickness, hydatid disease, ringworm, itch.	Lead-poisoning, opium-poisoning, arsenical poisoning, rickets, scurvy.	Wounds, fractures, dislocations, heat stroke, frostbite, electrical injuries, miner's phthisis, housemaid's knee, coal-trimmer's elbow.

IV

DIAGNOSIS

To diagnose a case means, in general terms, to find out what is the matter, and no more definite meaning than this is at present attached to the word in medicine. This follows necessarily from the failure to attach a definite meaning to "a disease"; because to diagnose means, strictly speaking, to specify "the disease" from (an attack of) which the patient is suffering. Here it is palpable that the profession is halting between two opinions, for, in the case of tuberculosis or typhoid fever, lead-poisoning or arsenical poisoning, this strict meaning is attached to diagnosis, while in the vast majority of cases it is not.

It is evident that as soon as a definite meaning is attached to "a disease," a fixed value has also been attached to the solution of the problem of diagnosis. "A disease" has been defined as a conception, drawn from the observation of a series of symptom-groups of determinate and similar causation. The "diagnosis" of such "a disease" can only mean the correlation of cause and effect in the individual patient. So much is tacitly acknowledged by the medical authorities in the case of all diseases of extrinsic origin; it is therefore unnecessary to insist further on this part of the subject.

It is beyond serious dispute that exactly the same standard holds good for diagnosis in the case of

diseases of intrinsic causation. To make a diagnosis, we must correlate the symptoms shown with their cause. When a child dies with diabetic symptoms, and these are demonstrably not due to the action of any intrinsic cause, the cause is a constitutional defect; to determine this means to make a diagnosis. And so it is with symptoms resulting from other constitutional defects, from incomplete development, from overwork, from deficient work, or from wear and tear. It is surely palpably ridiculous, to say the least, to pretend that because symptoms arise from a cause of intrinsic origin we are, therefore, absolved from discovering the cause. As a matter of fact, no one candidly denies that diagnosis means the correlation of cause and effect in the individual patient; but this position is not openly taken up by the authorities because it is not always convenient.

The differentiation of the conditions leading to, or predisposing to, the individual attack from the specific cause of the symptoms must again be insisted on. When the physician is called to see a patient acutely ill, his first business is to make a diagnosis, and this he does by specifying the "cause" of the symptoms shown. If it is a case, for instance, of tuberculosis, the demonstration of the active parasitism of the specific microbe settles the diagnosis; cause and effect have been correlated. To elucidate all the conditions that led up to the attack is a very different, and quite a distinct problem. We want to know how and why the microbes reached the patient, and we want to know why they found suitable conditions for propagation in the patient. It is quite clear that, practically, the elucidation of antecedent conditions may often be vastly more important than

the immediate and individual problem of diagnosis; but in the absence of a plain understanding as to the meaning of diagnosis (the correlation of cause and effect), it is impossible to elucidate antecedent conditions intelligently.

This applies with equal force in the case of diseases of intrinsic causation; if we do not candidly acknowledge the primary obligation of diagnosis, the whole problem of causation cannot possibly be clearly grasped, still less solved. For instance, when a young woman shows hysterical symptoms it is not warrantable to conclude that she is therefore truly hysterical; inquiry sometimes proves that the "cause" of the symptoms is to be found in bad hygienic conditions and overwork that have led to a deterioration of health. The breakdown of constitution resulting in hysterical symptoms, is then a condition precedent to the particular attack; the young woman has no intrinsic defect tending to loss of self-control, she would not have broken down under normal health conditions.

Apart from the fact that lines of demarcation must be broad and ultimately arbitrary, amongst constitutional diseases, and that there will therefore be borderland cases, there is evidently no real difference between diseases of intrinsic and extrinsic causation in the matter of diagnosis. A diagnosis has not in any case been made until effect has been traced to cause, and the whole problem of causation has not been cleared up until the conditions leading to the particular attack have also been ascertained.

It must not be imagnied from this plain exposition of the meaning of diagnosis that it is contended that the problem may be always reduced to simplicity;

that, for instance, symptoms however complex may always be traced to a single cause. The tracing of causation in disease is one of the most complex problems in science, it is often impossible to complete it. The same cause produces the most widely different symptom-groups in different cases; different causes produce symptom-groups that are often in parts quite identical; these two facts account for much complexity. Then again, while every cause of disease is single, it does not always act singly. For instance, a man who has a gouty constitution may indulge in gluttony, alcoholic excesses, and idleness; his attack of gout will evidently not be due entirely to one cause. People sometimes suffer from attacks of more than one disease at the same time. Much more might be said on the subject, but this will be sufficient. The more complex the problem the more essential is it that its true nature should be grasped and candidly recognised.

The view here taken of diagnosis may be summed up thus: all the processes that make up human disease are of a similar nature, they are natural processes, and consist invariably of cause and effect; in other words, symptoms of disease are in Nature invariably grouped round their causes. The physician, as diagnostician, is a pure scientist, and must, therefore, interpret these processes uniformly on the natural basis of cause and effect. Beyond the immediate problem of diagnosis lies the elucidation of the conditions leading to the occurrence of each particular attack. When both these problems have been solved, the whole channel of causation has been charted, the physician's scientific task is finished.

V

THE TRUE RELATION OF THEORY AND PRACTICE IN MEDICINE RESULTING FOM GENUINE DIAGNOSIS

The pure science of medicine has been described above as the outcome of an organised attempt to discover the whole causation of disease; this knowledge of causation, taken as a whole, forms the theory on which the regular practice of medicine is founded. The more we go into detail the more apparent becomes the entire dependence of practice on theory. Take, for instance, the case of malaria; it was known for a long time that the bark of a certain tree was useful in the treatment of an attack. When the parasite which caused the attack was discovered, it appeared that the quinine in the bark acted as a poison to the parasites, and the old empirical method was justified, as far as it went. But the tracing of the entire life-history of the parasite, that is, the elucidation of the conditions leading to the individual attack, put us in a position to rid whole districts, and even countries, of the scourge.

Thus we see that cure may be occasionally hit on empirically, that a knowledge of the specific cause puts this empirical treatment on a scientific basis, and that a complete knowledge of causation puts the art of medicine on its ultimate and true foundation when it makes prevention possible.

Another instance is furnished by the treatment of surgical wounds. The manual dexterity of the surgeon was no less fifty years ago than it is now, but the results of his operations were startlingly different. Encouraged by Pasteur's discoveries, Lord Lister set himself the hitherto neglected task and succeeded in clearing up the whole causation of septic infections; complete prevention was then for the first time possible. Instances might be multiplied indefinitely, but these are sufficient to illustrate the difference between ancient and modern methods.

Ancient art was not founded on knowledge of causation; in the instances given, modern art is; with the difference that the ancients dealt blindfold with effects while the moderns deal intelligently with causes. The relation of theory and practice in medicine will have to be examined in much detail presently; for the moment, only broad principles are dealt with. But it must be insisted that these principles are of universal applicability in medicine, and that the word "medicine" is here used in its original sense, that is, to include the whole science of human disease and the whole art of its management.

The end and object of all medicine is purely practical, it should consist in the preservation of health instead of merely in its restoration; the ultimate achievements of medicine are therefore directly due to practice. There are still some rare instances in which these practical results are reached by the empirical method, survivals of the time when almost the whole art of medicine was empirical. But with these exceptions the practice of the regular profession is now professedly based on pure science, on knowledge of causation.

The case of malaria indicates that though random cure is possible by the empirical method this does not bring prevention within reach; prevention is possible only in the light of a full knowledge of causation. But the preservation of health is impossible unless prevention be added to cure; therefore we say that the whole art of medicine is completely and absolutely dependent on science. Nowhere is it truer than in medicine that knowledge is power, that ignorance is impotence; and the only knowledge that can give power in the practice of medicine is knowledge of the causation of disease.

VI

PATHOLOGY

It is now necessary to begin the destructive part of my criticism; but before doing so I shall summarise the constructive part of my work on the science of medicine, so as to provide the reader with the standard on which this criticism is founded.

The processes of which human disease consists are assumed to arise exclusively from the action of natural, and therefore discoverable causes. From this it follows that our interpretation of these processes must be based on causation, and on this only. Experience proves that all the processes of disease fall into two primary divisions, according as the cause arises in the constitution or the environment of the sufferer, and that each of these divisions falls again into groups and sub-groups, until we reach ultimate subdivisions in each of which all the processes are of determinate and similar causation. From each of these subdivisions we derive the conception of "a disease," such as typhoid fever, lead-poisoning, heat-stroke, hair-lip, diabetes, hysteria. It follows as a corollary from this, that the specific term "a disease" or "the disease" cannot be applied to any conception not derived from a series of symptom-groups of determinate and similar causation without misinterpreting the processes of disease referred to; on this my criticism is based.

While no one would attempt to cut off human disease sharply from the rest of Nature, it is convenient roughly to draw an arbitrary line round it, so as to indicate the part of science in which the physician specialises his study: "pathology" is another name for this science of human disease. From the time of Hippocrates until within the memory of people still living, "pathology" was practically synonymous with "Humoral Pathology." The Humoral Pathology appears to us now as a mass of fantastic speculations; but it stood with our immediate predecessors as a satisfying "explanation" of the origin of disease; it was the "science of medicine" on which practitioners professed to base their art even within my own memory.

In the first half of the nineteenth century a young German anatomist, Rudolph Virchow, not only discovered but boldly declared, what no doubt many had suspected, that this so-called science of medicine had no foundation in fact. After a fair show of resistance by the strictly orthodox, the profession was only too glad to be rid of the Humoral Pathology, and the "anti-phlogistic method" was discarded with great benefit to all concerned. Unfortunately, Virchow not only destroyed the Humoral Pathology but he devised the Cellular Pathology to take its place, and his constructive work was accepted with the same unanimity as his destructive criticism. This acceptance was inevitable; because, when the Humoral Pathology had been destroyed, the practice of medicine had no longer even a nominal scientific basis. So that at the present time "Pathology" means Virchow's Pathology, and this means that Virchow has supplied medicine with a scientific basis for its art.

When Virchow originally assembled a number of German medical men to announce his discovery, he told them that the practitioner, being so much engrossed in practice, had neither time nor opportunity for the study of medical science, and that he must therefore resort to the "pathologist" for scientific guidance. I am well aware that the profession, outside the narrow circle of orthodox "pure physicians," now ignores Virchow's pathology, as a basis of practice, quite as completely as our fathers ignored the Humoral Pathology; but it is none the less still the nominal basis of orthodox medicine.

It is only three years since the senior physician of one of the great hospital schools of London, in addressing the annual meeting of the British Medical Association, declared that "all medicine is based on pathology." Lest there should be any misunderstanding about what was meant by "pathology," he added that the "physician" could not therefore spend too much time in the post-mortem room. This declaration, considering the circumstances in which it was delivered, represent the very acme of authority, and it would be unhesitatingly endorsed by every pure physician. So that modern orthodoxy is still expressed in words that are an exact paraphrase of Virchow's own declaration to the practitioners of his day.

Virchow set himself to devise a strictly scientific method in accordance with which the physician might seek the origin of disease, so as to have something solid on which to base his practice instead of the sandy foundation of the humoralists. He summed up the essence of his teaching in the memorable

phrase: "Every chronic disease is rooted in an organ."

It must be clearly understood that the "localisation of disease" was nothing new, it goes back at least to the days of demonology; specialists flourished in ancient Egypt just as they do in London; but Virchow gave a new, a "scientific" basis to an old superstition. In Virchow's time, the microscope was a new weapon in the physician's hands; the cellular structure of plants was a recent discovery, and when Virchow saw the physiological meaning of the cellular structure of man, and the pathological changes in these cells, he thought he had indeed reached the very origin of disease.

One single example will suffice to show the nature and scope of "scientific pathology," as it is sometimes tautologically called. A certain symptom-group had been familiar to physicians, clinically, for ages, of which dropsy was a leading feature. Bright found, on post-mortem examination, that these clinically observed symptoms were always associated with certain pathological changes in the kidneys, and so he connected the two as cause and effect. Virchow declared that Bright had succeeded in tracing "the disease" to the organ in which it was "rooted," and that therefore the demands of medical science were satisfied; "Bright's disease" became "a disease of the kidneys."

It is only necessary to compare Bright's disease with a true disease, such as lead-poisoning, to expose the fallacy underlying the whole "pathological" theory of disease. "The disease lead-poisoning" is a conception drawn from the observation of a series of symptom-groups of determinate and similar

causation; it stands for definitely correlated cause and effect. "Bright's disease" is also a mental conception, it represents a summing-up of a long series of observations; but the symptom-groups, from the observation of which it is derived, are neither uniformly of determinate nor of similar causation. It is quite evident, it is in fact beyond dispute, that when the pathologist demonstrates the kidney-changes, post-mortem, and decides therefrom that the patient suffered from "Bright's disease," not only does he not assign a cause for the symptoms shown, he does noe even pretend to do so.

What Bright really discovered was cirrhosis of the kidneys; that is, a certain morbid change in the structure of the kidneys that interferes with their physiological action; but it is perfectly evident that this cirrhosis is a symptom, just as dropsy is a symptom. When Virchow declared that the lesion discovered in the kidneys was the "cause" of the other symptoms included in an attack of "Bright's disease" he established the fallacy that lies at the foundation of his "pathology"; in calling one symptom the cause of others he created for himself and his disciples an artificial horizon that effectually shout out the true cause from their view. Every one knows this nowadays just as well as I do, but it is not convenient to acknowledge it.

Every physician who describes lead-poisoning puts down cirrhosis of the kidneys as one of the symptoms often present; yet in other cases when he finds this same cirrhosis, on post-mortem examination, he declares that the patient died of "Bright's disease," a disease of the kidneys. Scarlatina, influenza, alcoholic poisoning, gout, are amongst the other true

diseases where cirrhosis of the kidneys is known to occur as a symptom; so that in drawing a conception from a number of cases of cirrhosis of the kidneys and calling it "a disease" the conception is clearly drawn from a series of symptom-groups known to be of dissimilar causation.

It may be, it often is, urged that as these facts are well known inside the profession it does no harm to make a loose use of the specific word disease, and that it is convenient to retain Bright's disease as "a disease." The answer to this is, that the licence thus taken is constantly used for the purpose of concealing ignorance of causation in individual cases. When the pathologist finds cirrhosis of the kidneys, post-mortem, he knows perfectly well that there was a cause at the back of it during life, and his duty as pure scientist is obvious; he ought to say, Here is a symptom of disease for which I am unable to account with the evidence before me. Instead of this, he falls back on "scientific pathology" and declares that the man died of "Bright's disease," thus distinctly implying that he has found the cause of death. The pathologist of to-day uses Virchow's dogma to cloak his ignorance of causation in precisely the same way as his predecessor used the old Humoral Pathology.

There could not be a more complete misuse of terms than to say that "a disease" is rooted in an organ: every attack of disease consists of a cause and a resulting symptom-group; even if all of these symptoms were concentrated in one organ—as they never are—the cause cannot possibly be localised; therefore the attack is not "rooted in an organ." "The disease" is a mere abstraction, to say that this is "rooted in an organ" is clearly absurd. Therefore

Virchow's one great dogma, "every chronic disease is rooted in an organ," has no foundation whatever in fact. The origin of such a belief goes back really to the dark ages of medicine, when the word "disease" was used quite indiscriminately. Such an expression as this: if your kidneys are diseased, you must have a disease of your kidneys, represents pretty faithfully the nebulous state of the medical mind only a few years ago; the resulting amorphous condition of our science is still with us, as is seen in the case of Bright's disease.

It is impossible to read Virchow's great work *Die Cellular Pathologie,* without seeing that he was an anatomist, pure and simple; his "science" began and ended in the post-mortem room; there is not a breath of true, of clinical, medicine in the book. With Virchow, "the science of medicine" and "morbid anatomy" are synonymous terms; the clinical correlation of cause and effect are beyond his ken; he was not a physician.

In 1868 Lord Lister had completed his immortal scientific work on the septic infections, had put it into practice and had announced the successful results to the world; in 1870 the German army surgeons practised "antiseptic surgery" in the war. In 1871 Virchow published a new edition of his work, and it contained no mention of these events; neither does it contain any reference to "the diseases" of poisoning nor to those of constitutional origin.

So that it is literally true to say that Virchow's science of medicine rests entirely on his "organic diseases," and of these "Bright's disease" is a classical example. After exposing the artificiality of the ancient "Humoral Pathology" Virchow devised and

set up in its place another system that is not one whit less artificial; the man who calls Bright's disease "a disease" is in the same boat with the man who used to call dropsy "a disease." But as soon as it is recognised that all "diseases" must be defined and classified on the natural basis of cause and effect—clinically correlated—there is an end of all artificial systems, humoral or cellular.

VII

SPURIOUS DISEASES

The determination to take a comprehensive view of "disease" leads inevitably to the definition and classification of "diseases" on the natural basis of cause and effect. According to this ideal, all symptoms of disease must be included in the survey of the physician; in other words, those who pursue the science of medicine must have for their ultimate object the compilation of a complete record of the processes that make up human disease; and in order to serve as a reliable basis for practice, this record must be kept in terms of causation. It follows from this, that there must be only one scientific method in medicine; if all symptoms must be recorded on the basis of causation there will be none left to be dealt with otherwise. But, as a matter of fact, no scientific method is recognised by the profession as holding the field to the exclusion of all others; hence it occurs that medicine is hampered by a vast number of spurious diseases.

The whole creation of spurious diseases rests ultimately on a misunderstanding, but this misunderstanding is rooted in superstition and has been much fortified by modern pathology. It is essential in discussing spurious diseases to bear in mind the difference between the actual attack and "the disease," which represents a summing-up of our experience of many similar attacks.

The so-called diseases of the mind may be dealt with first. It has been stated by no less an authority than Dr. Charles Mercier that in an attack of insanity symptoms are never confined to disturbance of the mind, that the bodily functions are invariably disturbed as well. Therefore, to begin with, an attack of insanity is only called so because the mental symptoms are the most prominent. It is clearly convenient to speak so, but it is important to realise that there is no such occurrence as "pure insanity"; pure insanity is connected in the popular mind with the old superstition of possession.

In the next place, when we speak of insanity we are speaking only of symptoms, and of symptoms that are caused by many different agencies in different cases. Some people show symptoms of insanity because they have inherited a faulty constitution that leads inevitably to this particular form of disease; others show similar symptoms under the influence of drugs, others when they suffer from severe infections, others under stress of war, or of the terror attached to earthquake, fire, or other calamity.

At present, our conception of "the disease insanity" is derived from the observation of such cases as those just mentioned, and others; it is derived in fact from the observation of all cases where mental symptoms are prominent, regardless of causation. This differentiates absolutely "the disease insanity" as at present described, from "the diseases" typhoid fever, lead-poisoning, heat-stroke; for, our conceptions of these diseases are based on the correlation of cause and effect; each one of them represents a series of cases that are all of determinate and similar causation.

It is possible to frame a conception of "the disease insanity" that shall correspond with the other true diseases; by taking that series of cases in which the cause of mental symptoms is invariably a constitutional defect we may draw therefrom a conception based on the clinical correlation of cause and effect, this will be a true disease. But as long as cases of dissimilar causation are forced into one series, "insanity" must remain a spurious disease. Until the profession can be persuaded to recognise the intrinsic causes of disease the present state of confusion is inevitable. The subdivisions of insanity do not concern us at the moment.

The so-called diseases of the nervous system are nearly allied to insanity, they often overlap. The neurologist is simply a specialised "pathologist," he is a true disciple of Virchow. The work called *Diseases of the Nervous System,* by Sir William Gowers, is one of the most complete tasks ever accomplished by one man; it is truely a monumental work. But it was written under the masterful influence of Virchow; it is specialised "pathology," and its proper title would be "The Morbid Anatomy and Physiology of the Nervous System." At the basis of the work lies the dogma: Every chronic disease is rooted in an organ. The morbid anatomy of an organ is accepted as the "cause" of "a disease."

Locomotor ataxy is one of the most cherished "diseases of the nervous system." A certain symptom-group, observed clinically, is traced post-mortem to certain "lesions" in the spinal cord, and then a case of "the disease" has been demonstrated; the neurologist sometimes calls it a "complete pathological entity"; why "entity" it would be hard to

say. No one knows better than Sir William Gowers that several different "causes," properly so-called—different toxic agents—are capable of giving rise to this symptom-group; it arises also in cases of intrinsic causation, not merely, be it noted, the clinical symptoms, but the symptom-group characteristic of locomotor ataxy, post-mortem lesion and all.

Therefore, the conception that is called "the disease locomotor ataxy" is knowingly drawn from a series of cases admittedly of dissimilar causation; it is therefore a spurious disease. Locomotor ataxy is thus just as much and just as little a true disease as is Bright's disease; if it is legitimate to confine attention to symptoms, to the exclusion of their cause, it is true that symptoms demonstrated post-mortem are indeed the "cause" of other symptoms observed clinically, then these are true diseases; if this is not true, they are spurious diseases, misleading conceptions.

Infantile paralysis is another so-called disease of the nervous system; a certain lesion of the spinal cord is the basis of the neurologist's conception. In cases of locomotor ataxy the true cause of the damage to the cord is often quite obvious, the case of infantile paralysis is just the reverse. There is no pretence whatever made in defining "the disease" infantile paralysis to reach the cause of the symptoms described. The neurologist is here quite candidly a "pathologist"; he observes a whole symptom-group, partly clinical and partly post-mortem, and then, instead of looking for the cause of the entire group, he divides it arbitrarily into a clinical part and a post-mortem part, and calls the latter the cause of the former. So obsessed is the neurologist by his faith

in "pathology," that if pushed on the subject of causation he asserts that he is quite justified in calling the "lesion" in the cord "the proximate cause of the clinical symptoms."

But he goes much further than this, for the neurologist so implicitly accepts infantile paralysis as "a disease" that he is honestly convinced "the cause" will be discovered some day; and no doubt by a "laboratory man." This, as any practitioner could tell him, is a mere delusion; this sacred "lesion" is not always the result of the same toxic agent; the tracing of causation is a clinical problem and it will never be solved in the laboratory, nor fully solved in cases of infantile paralysis, until the constitution, history, and environment of the patients are taken into account. "The disease infantile paralysis" is therefore a conception drawn from the observation of a series of cases of dissimilar and unknown causation; it is a spurious disease. It is unnecessary to mention in detail any more of the "organic diseases" of the neurologist; they all rest on the same pseudo-scientific basis; general paralysis, spastic paraplegia, insular sclerosis, Landry's paralysis, are other examples.

In contradistinction to these "organic diseases," the neurologist describes others as "functional diseases of the nervous system"; hysteria is an example. The neurologist does not mean that symptoms of hysteria are confined to functional disturbance, for hysterical patients suffer sometimes from muscular atrophy and contracture, with possibly fatal results. I shall give the neurologist's meaning in language of the highest official authority; he means that he "has been unable to find the anatomical seat

of the disease." This is merely a fresh profession of faith in "pathology"; he cannot determine in what organ "the disease is rooted." Here, again, the neurologist, as pathologist, is debarred from seeking the cause of the symptoms clinically; he must not acknowledge that the patient has a "constitution." And accordingly, in the orthodox definition of hysteria, there is no mention whatever of causation.

We all know that hysterical symptoms follow different causes in various cases, therefore our conception of "the disease" is at present drawn from a series of cases of dissimilar causation. The situation would be easily rectified by recognising that a constitutional defect is the invariable cause of hysterical symptoms in all cases of true hysteria, and that in other cases where these symptoms occur, the cause is extrinsic in origin.

It is perfectly obvious that in all cases of so-called diseases of the nervous system we have to do with cases where the most prominent symptoms are nervous; these symptoms are named—quite irrespective of causation—and then made to masquerade as "diseases"; but they are spurious diseases.

If the so-called diseases of the heart are looked at closely, it is again evident that we have to do with symptoms, falsely called diseases. Fatty degeneration of the heart is confidently called by the specialist "a disease of the heart"; but, in some cases, fatty heart is part of the symptom-group characteristic of phosphorus poisoning, and here it clearly becomes a symptom of phosphorus poisoning. In many cases, in most, in fact, fatty heart is only discovered after death; it is then too late to determine the cause of

the degeneration. But such a degeneration never occurs without cause, and whether we discover the cause or not, fatty heart remains a symptom.

It is evident, then, that if we draw our conception of "a disease" from the whole series of cases in which fatty heart occurs, we shall create a spurious disease; some will be cases of phosphorus poisoning, some will not; the majority will be of unknown causation. "The disease" fatty heart is, therefore, not derived from the observation of a series of cases of determinate and similar causation; it is a misleading conception. All attempts to localise "a disease" in the heart are doomed to similar failure; symptoms are localised, but symptoms only, the cause must be sought elsewhere before there is ground for the framing of reliable conception.

"The diseases of the lungs" are in no better case, they are of necessity spurious. No more universally recognised "disease of the lungs" could be chosen than "bronchitis." Bronchitis means an inflammation of certain parts of the lungs, with various accompaniments that need not be specified. Now, the symptom-group bronchitis occurs in cases of tuberculosis, of typhoid fever, of measles, and in attacks of various other true diseases; it is when all recognised diseases have been excluded, and the symptom-group bronchitis still occurs, that the patient is said to be suffering from (an attack of) "the disease bronchitis." It is therefore beyond dispute that "the disease bronchitis" is a conception, drawn from the observation of a series of cases of unknown causation. The orthodox definition of bronchitis is confined to an enumeration of symptoms; all mention of causation is deliberately excluded. If typhoid fever, lead-poisoning,

and heat-stroke are true diseases, then bronchitis is certainly a spurious disease.

The definition of bronchitis is in strict accord with the doctrines of "pathology"; it is instructive, as showing how the "localisation of diseases" rests now on so-called science, where formerly it rested on superstition. The pathologist says that "every chronic disease is rooted in an organ"; there is here not only no mention of causation, it is deliberately excluded; the pathologist's mind moves in an absolutely closed circle of symptoms, he has made an artificial horizon beyond which he will not look, and it shuts out the cause of the symptoms; the lung specialist is a pathologist. When the chief weight of an attack of tuberculosis falls on the lungs, the specialist again recognises "a disease of the lungs." This is obviously wrong; tuberculosis is a disease of parasitism; symptoms are in no case confined to the lungs, neither is the cause; such nomenclature is not in correspondence with acknowledged facts and ought to be discarded.

Much has been heard of late years of myxœdema, "a disease of the thyroid gland." Certain symptoms develop during life, and after death the pathologist demonstrates the "lesion" in the thyroid gland that "caused" the clinical symptoms; a series of such cases is the basis of the conception of "the disease myxœdema." The position is exactly analogous with Bright's disease; the thyroid is cirrhosed just as are the kidneys. But the cirrhosis of the thyroid is the result of the action of some toxic agent; it is a symptom of which the toxic agent is the cause.

Practitioners, who have the opportunity of seeing

cases in their entirety, could tell the pathologist of some of these causes—properly so-called—of the entire symptom-group, but he would not listen, he has traced "the disease" to the organ in which it is rooted, and there the matter must end. If the causation of every case that shows myxœdematous symptoms were fully traced, it would be evident that these symptoms form part of attacks of many different true diseases; but as long as causation is not inquired into, and our conception is drawn from a series of symptom-groups of indeterminate and varying causation, myxœdema must remain spurious disease.

The so-called diseases of liver, pancreas, spleen, suprarenals, and so on, are all of exactly the same nature, and need not be particularly dealt with; they all rest on the "pathological" theory of the origin of disease.

There is a large class of spurious diseases that may be described as the "itises," that are much in evidence at the present time; appendicitis and neuritis are familiar examples. An inflammation, real or supposititious, is located in some organ or region, and then, under the name of some particular "itis," it figures as "a disease." If the physician were to say to the patient: "I think, perhaps, one of the nerves of your arm is inflamed," it would not be convincing; yet this is all that "neuritis" means; no pretence is made of tracing causation. When a patient suffers from "sciatic neuritis," it is quite true that the sciatic nerve may possibly be inflamed by some unexplained reason; but it also possible that the pain may arise from the pressure of a spinal abscess near the origin of the sciatic nerve; not all cases of "sciatic neuritis" are of similar causation, therefore "sciatic neuritis"

is a spurious disease, a misleading conception; and so is every other variety of "neuritis."

"Appendicitis" is equally misleading, as "a disease." Even if the appendix were inflamed in every case of so-called appendicitis—which it is not—it is clearly absurd to delude ourselves with the notion that in saying "itis" we have traced the causation of the inflammation. The present conception of "appendicitis" is drawn from a series of cases that are of causal antecedents far too numerous to mention here; it is a spurious disease of the most misleading character. Arthritis, iritis, gastritis, enteritis, colitis, synovitis, laryngitis, tonsilitis, and many others, might be cited, but it is unnecessary; no one would maintain nowadays that to say "inflammation" is to specify the cause of the attack; to call the inflammation "itis" does not improve matters.

People have become so accustomed to hear of "the diseases of the skin" that their genuineness is taken quite for granted; they are nevertheless spurious. When the dermatologist says that urticaria (nettle rash) is a disease of the skin, he draws his conception from the observation of a series of cases in all of which this rash has been present; but he draws his conception from the rash, not from the whole case, the cause of the rash is not included in his survey. In some cases this rash is caused by unwholesome food, in others by sewer-gas poisoning, in others by some traumatic agency, such as parts of the nettle, and in many the cause is not discovered. So that "the disease urticaria" represents a series of cases that are of varying and often of wholly unknown causation; it is a spurious disease.

The case of "psoriasis" is different; I have never

known the dermatologist, or any one else, inquire for, still less discover, the cause of this rash in any case; therefore "the disease psoriasis" represents simply a rash that is known to occur frequently; it is another spurious disease. The subject is too paltry to pursue further; nothing could be more arbitrary and artificial than the method of dermatology, neither can it by any possibility be made consistent. The dermatologist does not venture to call the rashes of small-pox, scarlatina, measles, typhoid fever or typhus, "diseases of the skin," simply because the correlation of cause and effect in these cases is so obviously important; but eczema, psoriasis, Hebra's prurigo, urticaria, purpura, and all other rashes are also always due to some natural, discoverable cause; to call them "diseases of the skin" is simply to cloak ignorance of causation; every so-called disease of the skin is of necessity a spurious disease.

Glaucoma is called "a disease of the eye" because in the cases from which the conception is derived symptoms are very prominent in the eye. But the ophthalmologist does not carry his examination of a case of glaucoma beyond the investigation of symptoms, causation is not mentioned. Here, again, we find a specific disease erected on the observation of symptoms without any reference to their causation. It is part of a method that has survived from the time of ancient Greece: "the disease" is in your eye; the symptoms are so and so; "the disease" is glaucoma. Such an expression was quite excusable two thousand years ago; but to set up "the disease glaucoma" beside typhoid fever, lead-poisoning, and heat-stroke, and to pretend that we do not know which is true and which spurious, is not excusable.

The discovery of "adenoids" was undoubtedly an important one; but to call this local glandular increase "a disease of the throat" was not scientific. If the throat were not the private preserve of the laryngologist, it would have been impossible for the profession to overlook the duty of tracing the causation of every case of "adenoids" before attempting to frame a specific disease. No one would dream of maintaining that all those who show enlargement of the glands in the axilla are suffering from the same "disease," and yet this would be precisely analogous with the position of the laryngologist with regard to adenoids. The profession is dominated by specialism, and specialism is founded on error; to call local symptoms "diseases" is wilfully to deceive ourselves; all true diseases are based on the correlation of cause and effect.

Chronic atrophic rhinitis is called "a disease of the nose," and this is a very instructive instance of the spurious disease. A case comes before the rhinologist in which certain parts of the nose and surrounding region are inflamed, and this inflammation is followed by wasting. If the custom of interpreting symptoms on the basis of causation were established, the rhinologist's first duty would be to look for the cause of the inflammation; but he, being a specialist, is looking for "local diseases," and so he gives the local symptoms a more or less classical name and leaves the causation alone; such is "a disease of the nose."

Deafness is so palpably a symptom that one wonders at the audacity of the specialist in calling it a disease of the ear; but we have seen that unless mere symptoms are called specific diseases, the whole house of cards that the specialists have built would fall,

therefore the whole profession recognises deafness as "a disease."

There is at least more plausibility about the expression "the diseases peculiar to women" than can be claimed for "the diseases of the nose," but the "diseases of women" are just as spurious as all other special diseases. The differences in the anatomy and physiology of the sexes give rise to differences in the symptoms through which the processes of disease show themselves in men and women; but the causes of disease, both intrinsic and extrinsic, are identical in the case of both sexes. There is no true disease the conception of which does not rest on its cause, therefore it is only symptoms and not "diseases" that are peculiar to the sexes.

The number of "general diseases" is steadily diminishing; the term is becoming too obviously absurd to keep company, for instance, with "diseases of parasitism." It is so painfully apparent that the one set of conceptions is based on a definite knowledge of causation, while this is excluded in the case of "general diseases." It has been shown that, having due regard to causation, we can frame a conception of "the disease diabetes" from the observation of a series of cases in which the cause of diabetic symptoms is invariably a constitutional defect. But Virchow's system excludes all recognition of the fact that the patient has a "constitution," and the modern "physician" is a "pathologist," therefore he must base his conception of "the disease diabetes" on symptoms only; the consequence is that "diabetes" is a spurious disease.

Diabetic symptoms are often the result of the action of an extrinsic cause, dietetic or traumatic, for

instance; such cases do not belong to the same series as the case of a child whose symptoms are of intrinsic causation. When diabetic symptoms are not due to a constitutional defect, they belong to a case of some disease of extrinsic causation; when this cause has been discovered, the nature of "the disease" from an attack of which the patient is suffering is decided, but not otherwise. When the physician says that several people who show diabetic symptoms, in each of whom the cause is different, are suffering from the same specific disease, "diabetes," he deliberately conceals the fact that he has not discovered the cause of the symptoms in any of the cases; this is the inevitable result of creating spurious diseases.

Until the definition of all diseases is candidly made to rest on causation, gout must also remain a spurious disease. Some people suffer from gout because of an inherited constitutional defect; this series of cases forms the natural basis of the conception of a true disease; all such cases present symptom-groups of determinate and similar causation. But the symptom-group from which gout takes its name arises also in many cases as the result of extrinsic causes—lead-poisoning, alcoholic poisoning, and so on. Therefore, while our conception of "the disease gout" is drawn —as at present—from all cases that show gouty symptoms, without any regard to their causation, it is clearly a spurious disease.

Many new growths are classed together as representing a group of "diseases"; but it is quite evident that such a conception of the nature of "a disease" is purely "pathological," and therefore utterly misleading. It was perfectly satisfying to Virchow to give the anatomical and morphological characters of can-

cer; the idea of tracing its causation never dawned on him; he was an anatomist not a physician. So firm was Virchow's belief in his own system, that he insisted with vehemence on classing cancer and tubercle together. The futility, and worse than futility, of calling a symptom-group of unknown causation, such as cancer, "a disease," is only slowly dawning on people even now. But as long as people were content with "pathological diagnosis" and went on treating cancer as "a disease," so long was our fatal ignorance of causation completely cloaked and absolutely stereotyped. "A frank confession of ignorance is the first step towards enlightenment." It is to be hoped that the adoption of a rational attitude towards the cancer problem may act as the thin end of the wedge in medical science; that before long we may be as candid in the case, not only of all other new growths, but also of myxœdema, infantile paralysis, lumbago, sciatica, and even "liver," whatever that may mean.

Enough examples of spurious diseases have now been cited to illustrate every possible phase of the question as to the differentiation of true from spurious diseases; the whole subject may therefore now be summed up. If it be granted that disease arises only in response to the action of natural, and therefore discoverable, causes, it follows that the scientific interpretation of the processes of disease must be based on causation. Following this method, we found that "a disease" is a conception, drawn from the observation of a series of cases presenting symptom-groups of determinate and similar causation. It follows from this, that any conceptional disease that is not drawn from a series of symptom-groups of determinate and similar causation must be a spurious disease.

The attitude of the medical profession towards this problem is summed up in a little book called *The Nomenclature of Diseases,* and I shall make this book the basis of my criticism. It is written under the authority of the Royal College of Physicians of London by a Committee appointed for the purpose. The most striking feature of this work is, that no attempt is made at the outset to make it clear what is or what is not "a disease"; this means that permission was given by the College to use the specific word "disease" as it might appear convenient to the members of the Committee in compiling the index; no limitation was imposed on them.

This must mean one of two things: either that the meaning of "a disease" is so well defined and so generally understood as not to require mention; or, that it has no fixed meaning; we shall see that the latter alternative represents the actual state of the question. But although it is undeniably "convenient" to use the specific word "disease" indiscriminately, it is not satisfying either to the Committee or to those who rely on their index for guidance.

For instance, "infantile convulsions" is set down as "a disease of the nervous system"; but it is marked with an asterisk. At the foot of the page is the note: "This term, being the name of a symptom, should only be used when more precise information is wanting. When the cause is known, the return should be made under the head of that cause." So that the Royal College of Physicians of London lays down in the body of this work what it lacks the audacity to lay down in front of it; that it is permissible to call "a symptom" by the name of "a disease" when we cannot, or will not, find the cause. This is an im-

portant declaration; it justifies, for instance, a custom that is said to have prevailed at the beginning of the South African war, according to which cases of typhoid fever (of which the cause was not known) were returned as "simple continued fever"; it was convenient to call "the symptom" "a disease." But if the authorities acknowledged that what our forefather called "the disease convulsions" must nowadays be recognised as being merely a symptom, why is "elipepsy" not also marked with an asterisk?

Epilepsy is another name for convulsions; the conception "epilepsy" does not rest any more than the conception "convulsions" on the correlation of cause and effect; they are both spurious diseases; they are derived, both of them, from the observation of series of symptom-groups that are not of determinate and similar causation. It is an example of the superstitious reverence for imposing words that still hangs about medicine; "epilepsy" carries more conviction than "convulsions"; "chronic rheumatism" is more imposing than "a pain in the knee"; "acute neuritis" is more readily accepted than "a pain in the arm." But in no case does one word or phrase contain more information about causation than the other.

All through this remarkable book the same admission is made occasionally with regard to symptoms uncorrelated with a cause; but the obvious conclusion, that true and spurious diseases may always be differentiated, is not drawn. The result is, that in the *Nomenclature* we are given a list of true and spurious diseases under the common description of "diseases"; typhoid fever, lead-poisoning, and heat-stroke are officially held to be scientifically on a par with Bright's disease, infantile paralysis, and psoriasis. This part

of the subject may be dismissed with the assertion that to place these two sets of conceptions on an equality is demonstrably unscientific, misleading.

It has been mentioned that the medical authorities refuse, nowadays, to recognise the fact that the patient has a constitution, and that causes of disease arise in this constitution. But in the *Nomenclature* hare-lip, cleft-palate, and so on, are classed as "deformities due to incomplete development." So that "incomplete development" is recognised as a cause of symptoms of disease, and as it undeniably arises in the patient's constitution, the College really recognises diseases of intrinsic causation without saying so. When a child of a certain constitution dies with diabetic symptoms, we all know that the cause is intrinsic in origin, the constitutional defect is precisely analogous with the "incomplete development" that is acknowledged to be the cause in cases of hare-lip; it is only the perverseness of the "pathologist" that delays candid recognition of the facts.

It has been shown that if the true meaning of "a disease" be recognised as resting on causation, "diseases" fall naturally into groups, under parasitism, poisoning, traumatism, incomplete development, constitutional defects, overwork, deficient work, and wear and tear. That "the diseases" of parasitism, of poisoning, of traumatism, and of incomplete development are recognisable is shown by their inclusion in the *Nomenclature;* if the other causes of intrinsic origin were added, the classification of the College would correspond with mine. The Committee not only leaves out four groups of diseases of intrinsic causation, but it adds an immense number of "local diseases" of heart, kidneys, liver, stomach, skin, nose,

tongue, joints, etc. Indeed, to realise the extent to which this localisation of "diseases" is carried the book must be studied; if repeated *in extenso* it would sound incredible.

The dilemma in which the compilers of this index have placed themselves, and the College, may be put in the form of a plain question, susceptible of a plain answer: Are, for instance, "the diseases of the skin," scientifically speaking, analogous to "the diseases of parasitism"; can typhoid fever and psoriasis be brought under one definition, and if so, what is the definition of "a disease"? The result of the failure to define ideas at the outset is, that the official *Nomenclature* contains some scores of true diseases, and omits many scores; and includes also many hundreds of spurious diseases.

VIII

THE MEANING OF ILLUSORY DIAGNOSIS

It has been explained that the value attached to the solution of the problem of diagnosis must depend on the meaning attached to "a disease"; because, diagnosis means the specifying of "the disease" from an attack of which the patient under consideration is suffering. When, therefore, "a disease" was defined as representing, always, definitely correlated cause and effect, the solution of the problem of diagnosis was at the same time defined as the correlation of effect (symptom-group) with its cause in each patient.

Such a solution is illustrated in a case of malaria; when the protozoon has been demonstrated in the blood of the patient, the symptom-group has been correlated with its cause, the parasitism of the microbe. The solution of the immediate problem of diagnosis reminds us that the whole question of causation is not thereby cleared up, that the conditions leading to the individual attack must also be investigated; but these conditions do not affect the specific character of "the disease" of which the attack under consideration is an example.

The meaning of illusory diagnosis is equally easy of comprehension; the recognition of genuine "diseases" leads to genuine diagnosis, the failure to recognise them, the admission of spurious diseases to our category, leads inevitably to illusory diagnosis. When the College of Physicians gives permission to draw

the conception of "diseases" from series of cases presenting symptom-groups of dissimilar, indeterminate, and even of wholly unknown causation, it gives its sanction at the same time to illusory diagnosis. Although "purely theoretical," this is not a matter of opinion but of fact; it is demonstrably true or false. In order to avoid a double controversy I shall draw my examples only from diseases of extrinsic causation, such as are recognised by the College.

When the physician says: This is a case of typhoid fever, this is a case of lead-poisoning, and the third is a case of frost-bite, he has in each case made a diagnosis; here, the authorities and I are in agreement. But the diagnosis in each case is characterised by the definite correlation of cause and effect; nothing else is attempted, the antecedent conditions are not taken into account. We will now take three other "diseases" from the *Nomenclature;* three that are not marked with an asterisk.

When the physician says: This is a case of myxœdema, this is a case of infantile paralysis, and the third a case of psoriasis, he has again solved the problem of diagnosis in each case, as prescribed by the College. But in not one of these three cases has the physician made any pretence of correlating cause and effect; he has in each case named a symptom-group without making any reference whatever to its causation. From these three examples a description may be drawn that is always applicable to illusory diagnosis. When the physician pretends to diagnose a case, but in doing so merely names, or renames, the symptoms shown, and does not correlate them with their cause, he makes an illusory diagnosis; in plain terms, he has not made a diagnosis.

The reader will now see the reason for going so fully into the question of spurious diseases; the subject may have seemed rather technical in itself, but the genuineness of diagnosis depends absolutely on the nature of "the diseases" that are "diagnosed," and the importance of diagnosis is obvious. What I wish the laymen to grasp clearly is this: when, in offering a diagnosis, the physician names a true disease he has, *ipso facto,* committed himself to a definite expression of opinion; he has specified the cause of the symptoms complained of. But when, in professing to give a diagnosis, the physician names a spurious disease, he commits himself to nothing more than labelling the symptoms; he has not even attempted to trace the loss of health complained of to its cause.

It is necessary to go a step further, and to insist that the failure to make a genuine diagnosis does not merely fail to enlighten on the one vital question involved, but that it closes the door against attempt in this direction. I have already said that the orthodox physician, when pressed, will acknowledge that, speaking literally, Bright's disease and psoriasis are not "diseases" in the same sense as are typhoid fever and lead-poisoning. But he holds that it is convenient to retain the right to call them so, on occasions; and he adds, that merely to call them "diseases," without meaning it literally, in no way stops or impedes the attempt to trace the symptoms to their cause.

Here, I think, the physician is entirely wrong; my experience leads me to believe that when the student is taught that "Bright's disease" and "psoriasis" are "diseases," he concludes that to name either of them is to make a diagnosis, and that he does not, as as a rule, trouble any further about tracing causation.

That the public imagine that they have received a diagnosis when a spurious disease is named, I have not the slightest doubt.

Taking, then, the *Nomenclature of Diseases* as representing the orthodox position towards the problem of diagnosis and its solution, these are the flaws I find in it. The list of true diseases is incomplete; there are, for instance, very many diseases of traumatism omitted, and of the diseases of intrinsic causation only those due to incomplete development are included; these are some of the sins of omission. On the other hand, whereas only a few scores of true diseases are included—less than half of them—there are hundreds of spurious diseases set down, to the inevitable confusion and bewilderment of the practitioner. The book includes many true diseases, and this surely implies a knowledge of what is "a disease," which again implies a knowledge of what is not "a disease"; this proposition and corolllary have been fully set out already. So that all that is necessary when the next revision is undertaken is, that the College should put in front of the book a plain statement as to what is and what is not "a disease," before starting the Committee to work.

IX

THE FALSE RELATION OF THEORY AND PRACTICE RESULTING FROM ILLUSORY DIAGNOSIS

The views that have been expressed here on the definition and classification of diseases, and on the meaning of diagnosis that follows therefrom, have been before the profession for some years without meeting with any serious contradiction. It is indeed impossible to deny that they are merely an extension and completion, in outline of views that are universally held at the present time to be true as to the nature of disease. At the same time, the profession holds that however indisputable these opinions may be in theory, the present methods yield better practical results than would be likely to follow a rearrangement of science and art on the lines here advocated. This is, of course, the crucial question; the practical test may be applied just as rigorously in medicine as in marine engineering; the medical profession must be judged ultimately by results.

The true relation of theory and practice is based on the fact that our management of disease will be intelligent and successful in proportion to our knowledge of causation. To appreciate this fully it is essential not to limit the idea of treatment to cure only, but to include in the management of disease the whole range of prevention, cure, and alleviation. The management of malaria illustrates this well, and will bear

repetition. Attacks of malaria used to be treated by the administration of "bark," while practitioners had still no knowledge whatever of causation; malaria has been ascribed to the action of an imaginary "miasm." Patients were often much benefited, and even cured, in those days, although the treatment was purely empirical. Then came the discovery of the parasite and the extraction of quinine from the "bark," when the treatment of the attack was put on a scientific footing.

The diagnosis of malaria was now on a scientific basis; the clinical correlation of cause and effect in each patient was possible; and this immediately made it evident that our knowledge of causation would not be complete until the conditions leading to the individual attack were also elucidated. When this had been done, but not till then, prevention became possible; in the light of a full knowledge of causation the practical management of malaria was placed on a completely rational and satisfactory basis.

I would urge the reader to pause and reflect, so that he may realise that what is so obviously true with regard to the management of malaria is, and must be, equally true with regard to the whole subject of the relation of theory and practice in medicine. Put in the simplest form this means, that if we know exactly why the patient is ill we shall be in the best possible position to treat him, and to ensure that he shall not have a recurrence; and that with this full knowledge of causation we shall have a good prospect of preventing similar attacks in others.

In order to contrast the true and the false relation of theory and practice in medicine, I shall now give a few examples that will show the results of indulging in illusory diagnosis. Bronchitis has been mentioned

as a spurious disease, because our conception of bronchitis is drawn from the observation of a series of cases in which this symptom-group is not always due to one known cause. In the orthodox definition of bronchitis there is, in fact, no mention whatever of causation, it is a mere labelling of symptoms. So that the treatment of bronchitis must of necessity be confined to dealing with symptoms; however successful it may be it is empirical.

This is the essential character of all medical art that is not founded securely on science; the physician who makes a genuine diagnosis traces effect to cause, he is therefore in a position to deal intelligently with the cause; the physician who is content with an illusory diagnosis, being ignorant of the cause, can only cure or palliate symptoms empirically.

Infantile paralysis is another spurious disease; the pathologist calls it "acute anterior poliomyelitis," which shows that he has added to our knowledge of the morbid anatomy and physiology of the nervous system. But it also emphasises the fact that we are still as ignorant of the causation of these cases as were our forefathers, who called them children's palsy. The mere labelling of symptoms never does solve the problem of diagnosis.

So that the treatment of infantile paralysis is limited to attempts to cure the effects of an unsought cause or causes, and these effects are for the most part absolutely incurable; we cannot and we never shall be able to restore the damaged nerve cells to functional activity. But worse remains to tell; as long as we are content to deliberately conceal from ourselves the fact that we are ignorant of the causation of infantile paralysis, so long will prevention remain impossible,

so long will the individual and the nation be handicapped with the effects of this "disease."

There is a vague notion abroad that because plague and cholera are due to the parasitism of microbes therefore they may be prevented, whereas, infantile paralysis being some sort of mysterious visitation must remain amongst the unforeseeable and unpreventable calamities of life. This is a remnant of superstition; there is no more mystery about the causation of a case of infantile paralysis than about a case of typhoid fever; it is mystification we suffer from. The whole causation of all cases of infantile paralysis will one day be cleared up, and then all such cases will be preventable. Another malignant feature of "the spurious disease" may be pointed out in this connection; when the "pathologist" calls infantile paralysis "a disease," he implies that the symptoms thus labelled are always due to one cause, and the whole profession lives in the hope that the scientists at headquarters may one day discover this cause; in the meantime, all effort in this direction on the part of the mere practitioner is paralysed. But the assumption is utterly unwarranted; if every case of infantile paralysis were independently examined clinically we should be in a very different position to-day.

Myxœdema is another spurious disease that goes on claiming a number of victims annually; and in the absence of all knowledge of causation this must remain so. When cases of myxœdema are well established, they are, it is true, much relieved by the administration of thyroid extract, but this is a pure piece of empiricism; until we discover the causation of these cases prevention is not possible. The practitioner knows the cause in some cases, he knows that

it varies, but it has been laid down authoritatively by the " pathologist " that myxœdema is " a disease " and must be treated as such, and the days of prevention are therefore postponed; science and art are kept in a false relation.

" The disease gout " is characterised, according to the " pathologist," by pain and inflammation in the joints, the deposit there and elsewhere of certain chemical substances, and later by changes in the arteries and kidneys. There is no mention of causation in the orthodox definition of this " disease "; what is " defined " is a symptom-group. This means that until this symptom-group is well established, it is impossible to " diagnose " gout; and this is the position rigorously maintained by the orthodox physician, the " pathologist."

But if we cannot diagnose gout we cannot treat it, and so it results that patient and practitioner are taught to wait supinely until gout can be definitely diagnosed before beginning treatment. But, unfortunately, all the " classical " symptoms of gout, the deposits, the hard arteries, the cirrhosed kidneys, and so on, are absolutely incurable; the time when the cause or causes might have been dealt with has been allowed to slip away, and we are reduced to attempting to cure incurable effects.

If the practitioner were taught that he must make himself fully acquainted with every channel through which symptoms of gout advance; if he were taught to interpret all symptoms of disease on the basis of causation, gout would then be seen to consist of a heterogeneous collection of symptoms, of widely varying causation, but all of them preventable, provided the constitution be fairly sound. Here it is evident

once again that if the physician confine his "science" to the detection of symptoms without reference to the cause, his art must be mere empiricism; instead of dealing intelligently with causes he must tinker blindfold at effects; prevention is not in sight.

"The disease diabetes" is also still defined on purely symptomatic grounds; all those who suffer from diabetic symptoms are supposed to exhibit the same "disease." Many cases of diabetes are of purely constitutional origin, and it is evident that to check the production of these unfortunate people it would be necessary to study hereditary tendencies closely, and to educate public opinion. But, at present, these cases are carefully hidden away with others of wholly different causation; until the obligation of tracing the causation of each case is candidly recognised, there cannot be any scientific advance, and art must wait on science. The "treatment" of diabetes is of necessity limited to dealing with established symptoms, since the "diagnosis" on which it is based is so limited; the failure to trace causation excludes the possibility of prevention; symptoms are treated, but the patient is not.

Rheumatic fever is now definitely classed amongst the infections, but apart from this we still hear much of "rheumatism," "chronic rheumatism," "muscular rheumatism," and so on; and it is painfully evident that the "diagnosis" in these and many allied cases throws no light whatever on causation. "Treatment" of these symptoms by the methods of hydropathy, balneotherapy, climatotherapy, galvanism, electricity, massage, drugs, exercises, represents a mass of empiricism that is really appalling. Sciatica is a nearly allied "disease"; when there is severe and prolonged

pain in the sciatic nerve we "diagnose" sciatica, or "sciatic neuritis," to be more modern. Various treatments are recommended, but if it appears that the pain was due to pressure from a tubercular affection of the spine, it may become evident that they have only robbed the patient of what little chance he might have had.

A case of asthma presents a very striking and easily recognisable picture, and so, this symptom-group is called "a disease," without any reference to causation. A false relation between theory and practice is inevitably established; we are at once committed to the treatment of symptoms—as such—to empiricism. A few years ago, I do not know how it is now, is was the fashion to "treat asthma" by cauterising the inside of the nose. One distinguished specialist said he looked forward to the time "when every practitioner would treat every case of asthma with the cautery."

One patient, for instance, has a first attack of asthma at the age of two; it is caused by a constitutional defect; another patient has her first attack at the age of seventy-two; her kidneys are cirrhosed, her end is near. There are very many patients between these two extremes in whom the cause of the asthmatic symptoms is sometimes purely intrinsic, sometimes purely extrinsic, and in others so complex as to baffle the most astute diagnostician; but the specialist invites the practitioner to treat them all by touching a certain spot inside the nose with the electric cautery; fortunately, the practitioner is not such a fool. It would be hard to imagine a more arrant or deliberate piece of empiricism, but it was urged on high professional authority.

Phlyctenular ulcer is called "a disease of the eye," causation has no part in our conception of it; it represents a symptom-group that is easily recognised. An ulcer in one child may be purely traumatic in origin; a cold draught will disturb the nutrition of the cornea in a healthy child and cause ulceration; another child will suffer from repeated attacks because it has a strumous constitution. If we "treat the ulcer" in these two cases, we are deliberate empirics; if we treat each child for the symptoms, after discovering the cause, we maintain the theory and practice of medicine in their due relation. Glaucoma is another instance; as long as it is maintained that this is "a disease of the eye," so long will the specialist fail to attempt the correlation of cause and effect in each case, and so long will his iridectomy, whether it relieve the symptoms or no, remain a piece of pure empiricism.

A certain rash is called "psoriasis, a disease of the skin"; the cause of the rash is not mentioned. When this rash is "cured," as it often is, by the application of ointments and lotions, we have another instance of the empiricism that must result from illusory diagnosis. It does not matter in the least who the person is who makes the "diagnosis"; if effect and cause are not correlated the neccessary foundation for rational treatment is lacking; there is no escape from this even for the most distinguished specialist. No person in sound health suffers from psoriasis, this rash is a danger signal; if we can find out why it appeared and can remove or avert the cause, the patient will in this respect be put in a position of safety; if we merely suppress the danger signal the benefit to the patient is, to say the least, problematical.

Urticaria is another rash, falsely called "a dis-

ease"; but in many of these cases the cause is obvious and the treatment consequently rational. But supposing the rash to be, as it sometimes is, a symptom of sewer-gas poisoning, the specialist who knows nothing of the environment of the patient cannot possibly find this out; if he succeed in "curing the disease" the patient will then continue to absorb sewer-gas until some more serious symptom appears to warn him.

It is more or less plausible to say that when a child suffers from adenoids it has "a disease of the throat" which may be treated locally and cured. But reflection will show that if the causation of this local increase of glandular tissue were completely worked out, it might be prevented in practically every case; and this would have obvious advantages over the present method. The fundamental error of calling symptoms "diseases" is responsible for an incalculable waste of health.

The old craze for cure, rather than prevention, the worship of empiricism, was once more illustrated recently. Just when the cancer problem was at last candidly faced, when we had been provided with more than one research department, well equipped and scientifically directed, the seekers after "cure" must needs spend a fortune on the establishment of a Radium Institute. If such experiments must be made, pending scientific inquiry into the causation of cancer, surely the research institutions possess every requisite, in abundance, except money. The Radium Institute, when turned to some better purpose, will serve as a monument to the misguided enthusiasm of the modern empirics.

These examples will probably suffice to illustrate the false relation of theory and practice that is still

so widely prevalent in medicine. It may be thought by some that such questions as these are purely technical, and that they ought therefore to be left entirely to the profession for discussion and decision; I shall explain what seems to me the correct attitude of the layman in the matter. The layman cannot too rigorously eschew the study and management of disease; its interpretation and treatment ought to be handed over to the regular profession; all self-diagnosis and treatment are not only futile but morbid. Health is to be maintained by those of sound constitution who have plenty of *bona fide* occupation, plenty of exercise, plenty of food, plenty of air; healthy people also provide themselves with wholesome recreation. But health is not to be attained surreptitiously, in the absence of these conditions, by the cultivation of some cunning system of diet, clothing, baths, exercises, drugs, " change," " rest cures " or what not; the preservation of health is a legitimate object for the layman as far as common sense guides him, but no further; the habitual, self-conscious attempt to avoid disease is a renunciation of health.

But while it is essential that the layman should leave the whole subject of disease in the hands of the regular profession, it is equally essential that he should understand the methods of the profession; otherwise he is apt to become sceptical, or to fall a victim of the plausible charlatan. The regular practitioner—whether he call himself physician, surgeon, specialist, or practitioner—bases his claim to public confidence, ultimately, on his power to make a diagnosis, but there is much uncertainty, even inside the profession, as to what is a diagnosis, a genuine diagnosis.

It is clearly most undesirable that the layman should attempt to pursue the subject of true and spurious diseases, of genuine and illusory diagnosis, in detail; but there is one all-embracing question that he may put to the medical man when a diagnosis is offered him, he may ask: Apart from nomenclature, which is unimportant, have you made out exactly why the symptoms have developed? No one could advocate always telling the naked truth to every patient, that is often impossible for obvious reasons; but in such cases there is practically always some relative or friend who ought to know the whole truth.

Of all branches of science, medical science is one of the most complex; but even this is after all only "organised common sense," and the common-sense view of the relation of science and art in medicine is summed up in this, that if we know why symptoms develop, cure and prevention are within possible reach; lacking this knowledge, while haphazard, empirical cure is just possible, prevention is impossible. If the public would but adopt a common-sense attitude towards the problems of disease, they would save themselves a world of disappointment and delusion; the regular profession would be placed in an unassailable position, and would be much encouraged and helped in approaching their work in a truly scientific manner.

It would be impossible to enter here on a full discussion of the subject, but reference must be made to the practical effect of the failure to recognise the intrinsic causes of disease. Diagnosis means the correlation of cause and effect in the individual patient; therefore, as long as these constitutional causes are not recognised, every case in which the symptoms re-

sult from the action of one of them leads to an illusory diagnosis. And so it results that in cases of intrinsic causation the symptoms are treated and the patient is not.

This represents what happens when both theory and practice are strictly orthodox; "based on pathology." It is true that common sense asserts itself to some extent, especially in general practice; but orthodoxy dominates the situation, and makes rational practice extremely difficult, sometimes impossible.

X

MEDICINE

Hippocrates discarded superstition and established medicine on a scientific basis; he ceased to appeal to the supernatural; he sought the causation of disease in Nature; the science of medicine was by him made a branch of natural science. But this science that Hippocrates inaugurated was a unified science; the physician was not only the diagnostician, he was the only diagnostician; he undertook to make a complete and comprehensive survey of the constitution and environment of each patient, and on this survey he founded his diagnosis. The physician always delegated certain parts of his art to others for performance; for instance, to the surgeon, the barber-surgeon, the obstetric surgeon, or the dental surgeon, but "medicine" remained unified and in the hands of the physician from the time of Hippocrates to the time of Virchow.

It has been explained how Virchow converted the physician into a morbid anatomist; how he taught him to look for each "disease," with scalpel and microscope, in the organ in which it was "rooted." When Virchow mistook morbid anatomy for "pathology," for the science of medicine, he had not the least conception of the nature or the consequences of the revolution he inaugurated in medicine. Virchow was completely justified in discarding the Humoral Pathology, but he could not have done a greater disservice to medicine than he did in breaking away from

the true Hippocratic tradition. When, at Virchow's dictation, the "physician" resigned the position taken up by Hippocrates he opened the flood-gates of spurious specialism, and "medicine" has been, for the time, submerged.

Virchow's one great dogma, "every chronic disease is rooted in an organ," was accepted as literally true, and the consequences were inevitable. In the first place, if "disease" cannot be detected until there are "physical signs" in the organ concerned, the "constitution" of the patient becomes of no account; the the modern "physician" says, "I do not believe that a knowledge of the constitution matters twopence in diagnosis"; the patient becomes a mere collection of organs, without individuality. In the second place, the subdivision of "medicine" becomes right and inevitable; if there are special "diseases" in each organ they ought clearly to be specially studied. If there are "diseases" of eye, ear, throat, nose, skin, there are, *a fortiori,* "diseases" of heart, lungs, liver, nerves, stomach, colon, thyroid, and so on. If the skin is entitled to its specialist, the claims of the stomach cannot possibly be disputed; and so it happens that "medicine," as understood by Hippocrates, has ceased to flourish, the "physician" is extinct. The modern physician, in his young days, is a morbid anatomist, and in his days of practice he is a specialist for heart, lungs, colon, stomach, nerves, gout, liver, or for galvanopeutics, therapeutics, massage, climatotherapy, balneotherapy.

It must be insisted once more that all attempts to subdivide the pure science of medicine are based on a misinterpretation of the processes of disease, and must therefore end in disaster. The definition and classi-

fication of diseases, to be true to Nature, must rest on causation; such definition and classification will be uniform and comprehensive; the true meaning of diagnosis follows as a corollary. For this natural scheme of medical science, Virchow substituted an artificial system; his "pathological" system of "organic diseases" has lured the physician from the bedside to the post-mortem room, and, inevitably, to a false specialism. But if the "science" of the morbid anatomist is false, may not his art be true; is he a success as an expert in a narrow branch of treatment?

This question has already been answered; illusory diagnosis cannot possibly give a sure foundation; false theory leads inevitably to futile practice. Specialists, for instance, have been studying "Bright's disease" and allied conditions for the last fifty years; the morbid anatomy and physiology of the subject are pretty well exhausted; but there is no corresponding advance in practice. "Bright's disease" is a spurious disease; the conception excludes all recognition of causation; therefore, when we "diagnose" a case we merely recognise symptoms, and symptoms that when recognisable are already incurable; treatment can, therefore, extend only to palliation, cure is impossible and prevention is far out of reach. This instance is characteristic of the whole art of the pathologist-physician; it is of the most pessimistic kind; the pathological theory of disease makes the practice of preventive medicine impossible.

XI

SURGERY

NOTHING could well be clearer or more genuine than the proper distinction between medicine and surgery. Medicine is one great whole including a pure science and an applied science or art; the pure science embraces all our knowledge over the whole territory of human disease; every application of this knowledge, from the administration of a draught to the amputation of a limb, is part of the physician's art. The true physician may delegate certain parts of his art to the surgeon; he makes no pretence to subdivide his science, still less to resign any part of it.

But the modern physician declares himself ignorant on the subject of "mental diseases"; he has no time for the study of dermatology, rhinology, ophthalmology, laryngology, gynæcology, neurology; he has resigned some nine-tenths of his pure science; it is not to be wondered at that the surgeon claims to have a science of his own, like the other specialists. The general surgeon, the dental surgeon, and the obstetric surgeon were originally recognised as men who had become experts in the performance of certain small portions of the art of the physician; now, they are "scientific specialists," the surgeon "diagnoses" "surgical diseases"; the dentist studies odontology, a separate science; and the obstetrician is a "gynæcologist" dealing in "diseases" peculiar to women.

It is clearly right, and even necessary, to specialise

certain men in the hospital, and in all populous places, for the cultivation of surgical treatment; but it is fatal to delude ourselves with the idea that there is any underlying subdivision in human disease corresponding with this convenient practical expedient. To set apart a group of men to operate is right, to divorce medicine and surgery is disastrous. The old physicians were lured into this error; surgical cases were segregated in surgical wards, and when they died by scores, of gangrene, the physician became accustomed to leave the responsibility with the surgeon, and to pass by on the other side. And so it happened that the attempt to diagnose septic cases fell practically to the ground.

Then, guided by the light of Pasteur's genius, Lord Lister took up the neglected work of the absent physician; he made an immortal diagnosis that not only changed the whole aspect of medicine, but brightened the prospects of humanity. When cause and effect were correlated, the septic infections became palpably preventable; and this, simply because Lord Lister refused to be a mere craftsman; because he played the intelligent part of the operating physician; because theory and practice had been restored to their true relation.

When the most distinguished members of the profession are divided into two groups, one group composed of "pure surgeons" who will not see a "medical" case, and the other composed of "pure physicians," misunderstanding is inevitable, and bias is deliberately cultivated.

I read the other day in one of the medical journals an account of a meeting for the discussion of "the treatment of appendicitis." It was attended by "physicians" and "surgeons." Now, our conception of

this " disease " is drawn from cases of the most extraordinary diversity; one case may be operated on for pain caused by slight anatomical abnormality in the appendix; at the other extreme would be a case where a pneumococcic infection proves rapidly fatal, in spite of all efforts medical or surgical; and between these two are all sorts of disturbances and infections by microbes of various kinds and habits.

It is extraordinary that a body of scientific men can be induced to discuss the treatment of all these different cases as a whole, when they know that each case must be diagnosed and treated absolutely on its own merits. However, not only did the discussion take place, but the journal was able to summarise it in saying that the " surgeons " advocated the earliest possible operation, while the " physicians " were in favour of non-interference or delay. One physician went very nearly the length of condemning surgical interference altogether, because, " he had never lost a case from this disease." And yet it is a matter of common knowledge that it is often a choice between immediate operation and death. Human nature being what it is, the separation of medicine and surgery—as at present authorised—must inevitably give rise to a bias of mind that is sometimes fatal to the patient.

Take a still simpler case; certain microbes gain a footing in the subcutaneous tissues of a limb; if the skin be promptly incised and suitable applications be made the microbes are destroyed and the man is saved; if treated " medically " the limb, and ultimately the life, may be sacrificed. But if the man attending such a case call himself " physician," that is, if he will not " operate," and will only call in the " surgeon " when he has to confess that " medical treatment has failed,"

the limb and the life of the patient are in jeopardy. This is the plain practical meaning of our departure from the true Hippocratic tradition.

There is only one science of disease, and being founded on the universal, invariable sequence of cause and effect it is indivisible without destruction; there is only one true art of medicine and it is based on the knowledge of causation. These fundamental facts have been lost sight of; they have been obscured by the attaching of an altogether mistaken value to arrangements which, however convenient, are local and personal.

XII

SPECIALISM

Division of labour, for the attainment of increased individual efficiency and greater collective results, is a feature of civilisation; there is a feverish demand for specialisation in medicine, so that the cure of disease may be effected completely and rapidly. The plea for specialism was put in a nutshell by a distinguished specialist when he said: "Since it is impossible for any one to know all about everything in medicine, let each of us try to learn all about something." This is very plausible; we shall see presently what is its true value.

When the specialist assumes that "medicine" is susceptible of subdivision, he assumes too much, for the science and the art of medicine demand separate consideration in this matter. The whole science of medicine is cultivated with but one object, and that is, the gaining of a complete knowledge of causation in disease; the whole art of medicine is based on this knowledge, and cannot therefore be legitimately exercised until the preliminary scientific work is complete. This relation of science and art is a fundamental principle in medicine, from which there is no escape for any member of the regular profession who takes independent charge of his patients. I shall give some illustrations to prove that there is much confusion as to what is and what is not specialism, and

also, that the modern specialist does not preserve the due relation between his science and his art.

When a number of mentally deranged patients are segregated for treatment, the man who devotes himself to their care is called a specialist; he is supposed to specialise in "diseases of the mind." It has been shown that the phrase "diseases of the mind" is a misnomer; that symptoms in these patients are never confined to the mind, and that unless the whole symptom-group be correlated with its cause in each case a diagnosis has not been made.

No one is better aware of this than the modern alienist; he makes an exhaustive examination of the physical condition of his patient, without omitting the domain of a single specialist, he makes the most minute inquiry into the heredity of the patient and then proceeds to acquaint himself fully with every phase of his mental aberration; in fact, without saying so, he makes the most thorough examination of his patient's "constitution." Having done all this with infinite patience, but not before, the alienist gives his diagnosis and, with some confidence, his prognosis.

This is a sketch in outline of the scientific method of the alienist; it is a slander to call him a specialist as far as his scientific work is concerned; he does not attempt to subdivide the science of medicine; he tries to work out the whole causation of his patient's symptoms, and in so doing he never dreams of omitting the examination, the complete examination, of both the constitution and the environment of his patient. It would be an equally gross slander to say that the alienist specialised in a particular branch of his art to the exclusion of all others; he does not neglect the slightest detail in the care of his patients.

It may be said confidently that no branch of medicine is in a more satisfactory state than that which is concerned with the whole management, scientific and practical, of the mentally deranged; and this is so because the alienist is a physician in the true, original sense of the word. His work makes him an expert, but he is certainly not a specialist in the sense that the dermatologist and the rhinologist are specialists.

The physician who takes charge of infectious cases is another expert of the same description as the alienist. A man may become an expert in the diagnosis and treatment of some particular disease: malaria, diphtheria, plague, or smallpox; but these men do not subdivide the science of medicine, they apply the true scientific method to a particular group of cases.

The method of the modern specialist is utterly different; take the dermatologist as an example. He is a specialist because he confines his attention to "the diseases of the skin," to the exclusion of all others; he says that the whole subject of medicine is too vast for one mind, and he attempts to learn "all about something." The dermatologist says, for instance, that psoriasis is "a disease of the skin," and that by studying many examples of it he will make his investigation exhaustive. But in his investigation, the dermatologist does not even attempt to get beyond naming a rash; his description may be ever so careful, but there is not even a mention of causation in it.

Such is the inevitable result of pretending to subdivide the pure science of medicine; there is only one indivisible science of medicine, and it is concerned with the tracing of causation. And so, when the spe-

cialist "treats psoriasis," he is treating symptoms and deliberately ignoring the cause; he is an empiric.

The ophthalmologist who "diagnoses" and treats glaucoma as "a disease of the eye," deals also with symptoms regardless of their cause; he is also an empiric. So is the rhinologist who professes to cure asthma by cauterising the inside of the nose; he goes out of his way to declare that "asthma" must be "diagnosed" on a purely symptomatic basis.

The whole foundation of modern specialism has been examined in the chapters dealing with Spurious Diseases and Illusory Diagnosis; I would refer the reader back to them for details. It has been laid down as a fundamental and indisputable principle that our management of disease will be successful when founded on a full knowledge of causation; but that lacking this knowledge, cure must be empirical and prevention cannot be brought into play. The specialist attempts to escape from this; he openly ignores causation in his "diagnosis," and deliberately sets about the empirical treatment of symptoms.

The case against specialism may be summed up thus: in calling symptoms uncorrelated with their cause "diseases," the specialist employs an unscientific method; the practical result is that he becomes an empiric, and that he cannot possibly practise or teach prevention. The effect on the whole profession is disastrous; in all cases claimed by any specialist, the search for causation by the general body of practitioners is forbidden; ignorance is cloaked and stereotyped.

We saw, in considering surgery, that the science and the art of medicine were clearly separable, and that when this is candidly recognised, certain parts of the art may with advantage be delegated to men set

apart for the purpose, under special conditions. The surgeon who makes an " exploration," without which the physician could not complete his diagnosis, puts his special manipulative skill at the disposal of the physician's brain; although two men act in conjunction, there is no divorce of science and art, of medicine and surgery. But when the dermatologist applies an ointment to a rash called " psoriasis," the physician is not there, the brain is lacking; art has taken precedence of science.

XIII

GENERAL PRACTICE

The "pure physician" (the pathologist), the "pure surgeon," and the specialists work in an artificial world of their own devising; the general practitioner works in the natural world. The practitioner has to deal with cases as they arise; he cannot limit his attention to any particular class of cases selected by himself; he is the only member of the profession who is not a specialist. If, therefore, specialism were based on truth, the general practitioner would be doomed either to specialisation or extinction; but as specialism is based on error, the general practitioner represents the type that will survive. As soon as it is clearly recognised outside the profession that diagnosis must precede treatment, that a full knowledge of causation is the only safe foundation of rational practice, the profession will be driven back to the true Hippocratic tradition.

The general practitioner stands to-day where all physicians stood sixty or seventy years ago; with the exception of a few operating surgeons, who were recognised as expert craftsmen, the profession consisted then of physicians, some practising, some consultant, but all occupying a common scientific ground. all diagnosing in the same general terms. Then came "pathology" and, as a consequence, modern specialism; a complete revolution. No one would accuse the modern

practitioner of having fallen behind the standard of his predecessors of seventy years ago; he is in every way a more enlightened and useful man; he has advanced with the times. And yet he is held to be so inferior to any specialising member of the profession of his own time that comparison is simply impossible.

This is easily accounted for; the specialist's dictum, "since it is impossible for any of us to know all about everything, let each of us try to learn all about something in medicine," makes of the general practitioner a Jack of all trades and a master of none. Nothing but a return to common sense can save the practitioner from a position of hopeless inferiority; until it is recognised that a mere hasty labelling of local symptoms, under the pretence of special knowledge, does not solve the problem of diagnosis, we cannot attain to rational practice. The modern consulting physician is before all things a "pathologist," and to earn this title he must spend a great part of his time, for the first ten or fifteen years of his professional life, in the post-mortem room; this preparation is absolutely out of reach of the practitioner.

In old days, the consulting and the practising physician were both clinicians, they met on common ground; the one recognised the greater experience of the other, but the experience had been gained in a sphere open to both, in the clinical interpretation of disease. The modern consulting physician claims his superiority on the ground of a vast experience with which the practitioner is only acquainted, practically, by hearsay; the practitioner is not, and never can be, a "pathologist"; Virchow told him so quite candidly. No one can claim to be a specialist, properly so-called, who is not attached to a special hospital or the spe-

cial department of a general hospital; and seeing that the élite of the profession spend their lives in these hospitals and departments, and find something to learn all the time, the practitioner is clearly debarred from making any pretence to being a specialist.

So that the practitioner is forced to undertake cases of all sorts, and he is expected to deal with them by many methods, in none of which can he ever attain anything like efficiency. This represents plainly the way in which the profession is at present divided, and if it be borne in mind that the specialists are numbered by dozens, and are confined of necessity to a few great towns, while the practitioners are numbered by thousands and do almost the entire work of the profession, it will be seen that the position is grave. Seeing that there are specialists in London for heart, lungs, liver, stomach, nerves, skin, eye, ear, throat, and so on, it is clear that the practitioner has to deal single-handed with cases that are authoritatively divided amongst perhaps twenty specialists at headquarters; so that either the practitioner must remain permanently a mere makeshift, or the official system is unscientific; this dilemma concerns the whole body of the profession and the whole bulk of the community as patients.

This direct antagonism between the method of the practitioner and the methods of his teachers brings us back to the fundamental question of all medicine: What is the meaning of diagnosis? This question has been answered in an earlier chapter, and need not be discussed again; if the answer here given is right, then the revolution of the nineteenth century must be reversed; we must return to Nature and the Hippocratic tradition.

XIV

THE HOSPITAL

Physicians, surgeons, and specialists have a unique opportunity in the hospital to develop their scientific and practical methods to the full; their authority is undisputed and there is no lack of material. The work done in the surgical wards is admirable and need not be further referred to. Patients admitted to the medical wards are for the most part hopelessly broken down in their vital organs; palliation is all that can be done, and this is carried out most beneficently; the days when causes might be dealt with instead of symptoms are long past, so that in the great majority of cases the question of diagnosis, properly so-called, hardly arises. It is in the out-patient department that modern methods are fully developed, and to this attention will be confined.

It must be borne in mind that the hospital staff do not act as consultants towards their patients; people are not invited to come for a second opinion, but for diagnosis and treatment; they come, as a matter of fact, for cure. The hospital staff take the entire responsibility of looking after the health of those who entrust themselves to their care. The science of medicine is prosecuted, and the whole art of medicine is built on this science, for the preservation of the health of those dealt with at the highest possible level, by the prevention and cure of disease; the work of the

hospital out-patient department must be judged by this standard as applied to results.

Contagious cases and minor traumatic cases are dealt with at surgical out-patient departments, and here both diagnosis and treatment are rational. But with these exceptions, out-patients are dealt with by physicians and specialists on the "pathological" system, that is, they are classified and dealt with on the supposition that they suffer from "organic diseases." The physician deals with "diseases" of heart, lungs, liver, kidneys, nerves, and "general diseases" such as anæmia, gout, and so on; specialists deal with "diseases" of skin, eye, ear, throat, and so on. The nature of diagnosis and treatment as understood by the pathologist-physician and the specialists has been fully explained already in previous chapters; they do not consider the correlation of cause and effect an essential part of diagnosis, and they are therefore content to treat symptoms. The constitution of the hospital out-patient is completely ignored, neither is any inquiry made, in the vast majority of cases, as to his environment; he is a mere carrier of symptoms, without antecedents or individuality.

I have laid it down as a fundamental and indisputable fact that our management of disease will be intelligent and successful, ultimately, in proportion as our knowledge of causation is complete and accurate; no one will deny this in the abstract. But in the concrete, the hospital method is in flat contradiction to it. Bronchitis, Bright's disease, diabetes, anæmia, new growths, Hodgkin's disease, Graves's disease, hæmophilia, purpura, psoriasis, Hebra's prurigo, eczema, herpes, asthma, chronic rhinitis, adenoids, glaucoma, phlyctenular ulcer, gastric ulcer, and so on, almost the

whole of the material dealt with by physician and specialists consists simply of labelled symptoms, labelled without any reference whatever to causation. Not only, therefore, is treatment confined in the vast majority of cases to purely empirical attempts at cure or alleviation, but prevention is altogether excluded.

This is the climax of the charge that I have to lay against the hospital method, that under it, whatever success may be attained in the alleviation or cure of symptoms, nothing whatever is or can be done to diminish the volume of disease; no attempt is made to stop the supply at the source; we are content to tinker at effects while remaining deliberately ignorant of their causes. As far as the hospital method is concerned, there would be just the same supply of cases a hundred years hence as there is now. Those who think to maintain health by curing symptoms as they arise—irrespective of causation—live, and invite their patients to live, in a fool's paradise. I am no pessimist, the supply of cases is not going to last a hundred years, but the change is not being brought about by the hospital out-patient method. A recent innovation throws a flood of light on the situation.

Following the example set long ago in Edinburgh, some wise and philanthropic people started an anti-tuberculosis campaign in London, which was carried out at first by one medical man and a couple of trained nurses. These people now pay thousands of visits to the patients in their homes in the course of a year; they thus detect early cases amongst contacts, they remedy unwholesome conditions, they give good advice; "the keynote of their method is prevention." Not only is the hospital not jealous of these trespassers, but we learn from trustworthy sources that

the authorities are very glad to be rid of their troublesome tuberculous patients. Those in charge of our Modern Temple of Health, at the very headquarters of medicine, are glad to escape the management of the most deadly disease of our times! This is not altogether to be wondered at, when it is remembered that at the Temple of Health tuberculous patients are invited to sit for hours in an overcroweded, ill-ventilated room with polluted atmosphere, and that this can hardly be to the advantage of themselves or those who are huddled with them.

But there is no reason why the crusade should be limited to tuberculosis; rickets would be infinitely more easily prevented than tuberculosis, so would anæmia, so would phlyctenular ulcer, so would bronchitis. It is only a question of time, and not a very long time, until the rational method now being applied to the extermination of tuberculosis will be unversally recognised in medicine. And when it is recognised that the first step towards preserving health is to find out exactly why people show their several symptoms, either pathologists and specialists will move with the times, or the hospital method will be left high-and-dry, and with it the profession.

I shall now suggest some changes in the hospital method that are simple but drastic; their introduction will necessitate changes outside the hospital, but these must be dealt with separately. The grounds on which these changes are recommended may be very briefly recalled. All investigations of disease are directed towards the elucidation of causation, and this problem is a double one. Diagnosis means the tracing of symptoms to their cause; beyond this, we must understand the conditions that favour or retard

individual attacks. The whole art of medicine is dependent for its integrity and ultimate usefulness on the acquirement of this full knowledge of causation. From these facts we may deduce two fundamental principles for the guidance of those in charge of hospital out-patients. Every patient must be submitted to a complete and thorough examination in order that the causation of his symptoms may be cleared up. All treatment must be postponed until every effort to trace causation is exhausted.

A few illustrations will make the situation clear. A patient complains of a rash on his skin; the duty of the person he consults is to find out why the rash has appeared. At present, the dermatologist says: This is psoriasis; and supplies an ointment to rub in. He has not attempted to trace the causation of the symptoms, therefore he has deliberately put treatment before diagnosis. Now, if this person were to set himself to trace the causation of the rash called psoriasis, he would have to investigate both the constitution and the environment of the patient; but if he did so he would cease, *ipso facto,* to be a specialist, he would become a physician.

In the same way, when a child is presented for examination with an undue increase of glandular tissue in its throat, the first duty of the examiner is to find out the reason of the unhealthy symptoms, commonly called "adenoids." Again, to trace causation it is essential to go outside the throat, and to learn everything possible about the child's antecedents and surroundings; but this task belongs to the physician, not to the specialist. When a patient complains of asthmatic symptoms, and the specialist cauterises the inside of his nose without further, in fact without

any, inquiry, not only does treatment precede diagnosis, but diagnosis is altogether omitted.

When another patient complains of chronic cough, he is told that he is suffering from "bronchitis," and he is given a bottle of cough mixture; the tracing of causation is not attempted. Patients showing symptoms of poverty of blood are labelled "anæmia" or "chlorosis" and given iron. No doubt the iron often relieves the symptoms, at least for the time, but the preliminary tracing of causation is conspicuous only by its absence. Symptoms of myxœdema are relieved in the same way by the administration of thyroid extract, but no attempt is made at diagnosis. Cases of infantile paralysis are sent for treatment first to the galvanopeutist and then to the orthopædic surgeon, but neither the pathologist nor the neurologist, to whom the child goes in the first place, makes even a pretence of tracing the causation of the symptoms thus labelled; the child is not supposed to have a constitution, and its environment is not inquired into.

If it be true that diagnosis ought to precede treatment, and that it must be genuine, then the place of the "pathologist" and the specialist at the out-patient department must be taken by the old-fashioned, the Hippocratic physician. When every effort to trace the causation of the patient's symptoms has been exhausted, and the proper time has come for treatment, the question of how far the art of medicine may be profitably subdivided arises. The general surgeon, the obstetric and the dental surgeon have justified their existence; whether any other experts will survive is a question of detail that can be settled only by experience; it need not be considered here. But that

every patient has an inalienable right to meet first of all the true diagnostician few will be found to deny.

I think the influence of this change on the members of the hospital staff would be entirely for their good; no one ought to be allowed to specialise permanently in his art until he had served at least five years as diagnostician, as physician; he would then never reach the condition of narrowness characteristic of the fashionable specialist.

XV

A SUGGESTION

The art of medicine that does not include prevention is an incomplete, a maimed and crippled art; the art of medicine that is primarily preventive is complete, and wholly beneficent. There is only one way in which the hospital staff can redeem their art from its present purely curative and largely empirical condition and place it on a primarily preventive basis; and that is by acknowledging candidly that it is their invariable duty to trace the causation of all cases submitted to them for diagnosis. This can be done only by gaining a knowledge of the constitution and environment of each patient. It would be clearly impossible for the hospital physician to perform his duties in the hospital and the hospital-school, and at the same time to make the round of visits necessary to acquire the knowledge of his patients that is, nevertheless, I maintain, essential in rational diagnosis. My suggestion is designed to extricate the hospital staff from this dilemma.

The only capacity in which members of the hospital staff can be really useful to out-patients is as consultants; the question then arises as to who is to act the part of family physician to these people. I have no wish to disparage any particular class of practitioners; I have no doubt, like the rest of us, they do their best; but the method of the surgery in the crowded parts of London bears a damning resem-

blance to the method that has been condemned at out-patient departments. There can be no doubt that the very same mixtures are dispensed in the two places for the cure or relief of the very same symptoms; advice and medicine in one and medicine and advice in the other are practically identical; the tracing of causation and, consequently, preventive medicine are lacking in both.

The family physician who would do his duty must live amongst his patients; in no other way is it possible for him to acquire that intimate first-hand knowledge of them, of their habits, tendencies, and surroundings that alone can give a reliable basis for rational practice. The whole area surrounding each great hospital ought to be mapped out into suitable areas, and in the centre of each there ought to be an institute for the accommodation of a group of four or five practitioners. The slums are not the place where the practitioner can well settle down and make his permanent home, and these institutes should be reserved for recently qualified men from the neighbouring hospital. They would be in touch with and under the supervision of the hospital staff, who would act as consultants to their patients.

A limited number of cases would go to the out-patient department for a second opinion and for the instruction of students; those requiring it would be visited at home by the consultant. The hospital would, of course, continue to receive the urgent medical and surgical cases as at present. But the cases sent to out-patient departments would come with a complete and intelligently written history; they would come to help in the elucidation of causation, not for illusory diagnosis.

The time of serving in these institutes would probably have to be limited to, perhaps, a minimum of three and a maximum of five years; by changing one at a time, and not in batches, continuity of method and treatment would be secured. These young men would not practice midwifery; the practitioner loses much sleep and wastes much time in superintending physiological processes. These institutes would be supplemented by others for trained nurses, who would see as far as possible that the physician's orders were carried out.

Placed in the centre of a densely populated district, each institute would be within a very short distance of all patients served by it. There would be an out-patient department, a clinic, at which all those requiring regular treatment for minor and chronic complaints, especially children, would attend. It would probably be found advantageous to all concerned to delegate a good deal of this work to students attached to the hospital, who would attend at regular hours for the purpose, and to nurses in the early part of their district work. As far as possible, nothing ought to be allowed to interfere with the house-to-house work of the physicians and the fully equipped nurses of the institutes.

I am no Utopian, but it seems to me undeniable that such an arrangement would inaugurate a most beneficent revolution in our great towns, for it would be confined to London. If the mother of every infant were warned, almost daily if necessary, by physician or nurse, that if she did not feed her child in one way, and insisted on feeding it in another, it would suffer from rickets and become a cripple, the pathologist and the orthopædic surgeon would have

less to do. When these young men discovered and explained exactly why each anæmic patient suffered from these symptoms, there would be a saving both in iron mixtures and in health. When the connection between impure air and the symptoms at present labelled bronchitis was made clear to every one, open windows might be resorted to as a preventive instead of cough mixtures as a cure. The false and artificial line drawn between preventable and other "diseases" would disappear.

These practitioners of the future will not wait at home until well-developed symptoms of disease are submitted to them for cure; it will be their duty to make themselves fully acquainted, not only with all symptoms, but with the whole channel of causation through which these symptoms advance. They must take into account all defects in housing, feeding, clothing, sanitation generally. If conditons of work and wages do not admit of healthy life, they must make the fact known. Armed with this knowledge they will be expected to get in touch with every household in their area and by constant advice and guidance to forestall disease; "prevention will be the keynote of their method." These young physicians and trained nurses would have to be provided with board and lodging and a moderate salary; a levy, on the plan of the provident societies, but graduated according to the means of the patient, would at least partially cover this.

XVI

MEDICAL EDUCATION

For some professions, education can hardly be too academical; for medicine, it ought not to be academical at all. Medical education ought to be designed so as to bring out and strengthen whatever there is in the student of independence in thought, observation, and action. Medical science is one of the highest and most complex of the branches of natural science; it is, therefore, universally recognised that a preliminary scientific training is essential for the medical student. This preliminary training is at present often almost farcical; a few months are devoted to an undisguised cram; not with a view of obtaining a foundation for the scientific study of medicine, but with the idea of passing an examnination under a time limit. It is high time the preliminary training were taken seriously.

A boy cannot profitably begin the study of science until he has reached the age of sixteen, and until he has had a good general education. The future medical student ought to be obliged to make up his mind in good time; having reached a good standard of general education, he ought to begin his preliminary scientific training at sixteen. His general education would, of course, go on, but for the next three years he would spend half his time at science. Biology, botany, zoology, geology, chemistry, physics, and comparative anatomy would gradually be added; he

would also be given a grounding in bacteriology and the intelligent use of the microscope. These subjects would be studied as far as possible in the field and the laboratory, at first-hand. One subject at present omitted for some inscrutable reason from the medical curriculum would be added, that is, an outline of the history of medicine; ours is, I believe, the only profession that hides its origin from its members.

When the student had reached the age of nineteen, the way would have been cleared, and his mind would have been prepared, so that he might devote the next two years to the study of what may be called the alphabet of medicine, anatomy and physiology. But these subjects will in the future be taught in their entirety; normal anatomy and physiology are the alphabet of health, morbid anatomy and physiology are the alphabet of disease. Why the student is admitted at present to his clinical studies without any knowledge of the morbid phases of anatomy and physiology would be inexplicable if one did not realise the confusion that has followed the mistaking of morbid anatomy for the science of medicine, of "pathology." I have thought it better to mention the preliminary training of the medical student, but the subject need not be followed in detail; his clinical teaching is the essential point for consideration here.

It has been my object all along to bring home to the reader's mind the fact that there are two essentially antagonistic and irreconcilable views of medicine; the Hippocratic view, that survived for two thousand years, and the modern view that is now rather more than fifty years old. There is no scientific question to-day that can equal in importance the one that faces the medical profession; according to

which view shall the future practitioner be taught clinically? The days of rival "schools" in medicine are long past, the controversy is to-day very narrow and very definite, it is a purely scientific problem and does not admit of the intrusion of personal opinion or individual authority.

The question is, whether the Hippocratic tradition, founded on the unity of medical science, or the modern revolution that was introduced on the supposition that our science is susceptible of indefinitely minute subdivision, represents the true interpretation of the processes of disease. This fundamental question has been fully discussed in the opening chapters; the conclusion was reached that there is only one true meaning of "diseases" and their "diagnosis," and that medical science must be reunified. The question of true or false takes precedence of the question of convenient or inconvenient; therefore, the scientific basis of clinical education is already fixed, in my opinion; but it will be instructive to consider things for a moment as they are.

In the first place, the school—as distinguished from the hospital—is there, simply and solely, for the education of the practitioner; the education of the specialist is universally recognised as a post-graduate affair. But the school has not any real existence apart from the hospital; every real medical school is a hospital-school; the student who attempted to learn his work away from the hospital would inevitably fail. What the student learns by seeing and doing is his own; it is reliable, and available for future application; what he learns from books and lectures is not his own, it is not reliable, and when first applied is of doubtful utility. The ideal in

medicine is to teach clinically, and as far as possible clinically only. The clinical student, the future practitioner, therefore learns his work in the hospital, and in accordance with the methods in vogue there.

The hospital methods, the methods of the "pathologist" and the specialists, have been criticised in the light of the views here taken of "diseases" and their "diagnosis"; they have also been criticised on the ground that they do not conform to the due relation of science and art. The future of these practitioners must also be borne in mind. They supply the family physicians in town and country, they are in charge of Navy and Army, they supply medical officers for poor law and police work, they take charge of the lives of subject races in our dependencies; they, practically, do the work of the profession. And in doing this work they cannot be pathologists, and they must not be specialists; for the practitioner to fix his attention on some small sphere and exclude the rest of disease from his attention would be palpably fatal. Therefore I say that no conceivable reason can be advanced in favour of educating the future practitioner in twenty different specialisms, of none of which he can obtain more than the veriest smattering in the time at his disposal.

One may safely go further, and say that it is a physical impossibility for any student to gain even a smattering of all the specialisms now represented at his school; "pathology," skin, eye, ear, throat, orthopædics, gynæcology, children, electricity and X-rays, are bad enough, but his "physicians" are specialists in heart, lungs, nerves, diabetes, kidneys, bacteriology, and so on; if he is wise he will spend at least a year at pure surgery, and beyond all this he

must learn something of "fevers," insanity, and hygiene.

The matter is far beyond argument; the authorities acknowledge that the student is now set an impossible ask; post-graduate schools are springing up for the instruction in specialism of those who live in or near London, and who can afford time and money to travel up and down constantly. But at least ninety-nine practitioners out of every hundred cannot avail themselves of the opportunity; judged by the specialists' standard, these men are sent away in an avowedly uneducated condition, and this condition must grow rapidly worse, because, from the moment of leaving the school the practitioner discards even the pretence of being a specialist. This is the dilemma in which medical education has been landed by a revolution that is hardly thirty years old yet; by the introduction of specialism into the hospital.

Although the school has no real existence apart from the hospital, yet the hospital has an independent existence; it came first into being; for its primary object was the relief of the suffering poor, and this object has never been lost sight of for a moment. The school grew up in the hospital, for obvious reasons, but if it could be shown that the present methods were for the good of the patients, the good of the student could not for a moment claim consideration. But there is no possibility of any real antagonism between the interests of the patient and of the future practitioner; it is obvious that both are in search of the best possible method in medicine—using the word in its original, comprehensive sense.

Some ignorant and fanatical people imagine that the presence of the physiologist and the bacteriologist

and other "laboratory men" in the school has some sinister meaning, that the student really does victimise the patient in some uncanny way for his instruction. The physiologist and the bacteriologist are, it is true, not physicians; life is much too short for such a double part; but it may be stated quite confidently that modern medicine could not exist, still less progress, without the help of these and other laboratory workers, and that if their methods, including vivisection, were interfered with, they would be rendered scientifically impotent.

The hospital and the hospital-school—and therefore medical education—are criticised together, both have adopted a right or a wrong method. In dealing with the hospital it was pointed out that the staff have created for themselves an artificial world; they deal with a segregation of sick people whom for convenience in cure they divide quite arbitrarily into groups. The reason that this grouping is arbitrary and unscientific is, that it is made on the basis of symptoms, and not on the basis of true diseases. The characteristic art of the "pathologist" and of each specialist consists, therefore, in dealing with symptoms, as such, without reference to causation; it is empirical. I have shown that this method does nothing to lessen the supply of disease at its source, that it excludes the possibility of prevention.

It has also been shown that as soon as the hospital staff are obliged to look beyond the artificial horizon they have made for themselves, and to realise their responsibility towards the inhabitants of their district, there will come complete change of method. When prevention is taken in hand it will have to be recognised that each patient has a constitution, that in fact

the patient must be treated and not merely the symptoms; and that it is impossible to treat the patient intelligently without a complete knowledge of his environment. It is only necessary to throw down the artificial barrier that separates the hospital staff from the ordinary world to make it clear that the scientific problems with which the profession is called upon to deal are the same all the world over. We shall always have in the hospital whatever experts are necessary, but they must be recognised candidly as experts in some branch of the art of medicine, as craftsmen appointed by the physician. But the science of medicine must be reunified, the old-fashioned physician must be reinstated as diagnostician.

At present, the future practitioner is introduced to a school where there is no one who makes any pretence of accomplishing that to which he knows he must aspire; he is told in plain terms that he is attempting the impossible. The specialist says: "It is impossible to learn all about everything in medicine"; this is undeniable, no one ever pretended to do so, nor dreamt that it could be done; it is a platitude. But when the specialist goes on to say that "each one ought therefore to try to learn all about something in medicine," he condemns the practitioner to hopeless inferiority. It is not many years since the practitioner would not have looked in vain to the hospital physician to stand by him and disprove the slander; but since the "physician" became a specialist for heart, lungs, kidneys, gout, colon, massage, climatology, bacteriology, or what not, the practitioner stands convicted.

There is no escape from the central problem of

medicine, science is the foundation, the whole art is a superstructure; the integrity and the stability of medicine must therefore depend on the truth or the falsehood of our interpretation of the processes of disease. If it be true that "diseases" are localised in organs and regions, and can therefore be properly diagnosed and treated only by the specialist, let the hospital physician resign his old title and declare himself candidly a specialist. As long as things remain as they are the practitioner will be obliged to take cases as they come, and therefore to obtain some knowledge of everything in medicine; but it is only fair to him and to his patients that there should be some plain pronouncement as to his education.

If it be true that all we can do to control the process of disease by prevention, cure, or alleviation ought to based on the completest possible knowledge of causation, than the whole fabric of "pathology" and "specialism" falls to the ground. The practitioner is still on the road that Hippocrates pointed out, the "pathologist" and the "specialist" have left it. Teachers and pupils cannot permanently travel on diverging roads: which shall it be?

XVII

ORGANISATION

It is taken for granted in a general way that the medical profession is organised for its work; this is only very partially true. I have attempted to show in dealing with the hospital method that the profession is not properly organised for its practical work; but this is not all. Every member of the profession has a double duty to perform; his immediate, personal concern is with the health of his patients; but as a scientific man he has to add his share to the common stock of knowledge. For the performance of this perennial scientific task the profession is wholly unorganised.

The science of medicine consists of our organised knowledge of human disease, and the daily experiences of the whole profession make up the raw material out of which this science alone can be built up. We have no organisation for the collection, digestion, and systematising of these experiences; the vast bulk of our raw material is deliberately allowed to die unorganised and unrecorded with the individual practitioner. There is clearly a double loss in this lack of organisation; the practitioner is prevented from adding to his science, and he is at the same time debarred from learning what his fellow members are doing and thinking.

An attempt made some years ago by the British

Medical Association to fill this palpable gap served to show the hopelessness of the task in the present unorganised condition of the profession. When the Association, numbering many thousands of members, announced the intention of carrying on collective investigation, there was a good deal of enthusiasm aroused. The scientific work of the Association is in the hands of "pathologists," operating surgeons, and many specialists; this is shown in the Journal and in the arrangement of sections at the annual meetings. Therefore, to begin with, the whole body of the profession, representing the thousands as distinguished from the dozens, was excluded from participating; the practitioner is neither "pathologist," pure surgeon, nor specialist.

But this is not all; the gynæcologist is not interested in ophthalmology; the laryngologist neither knows nor cares anything about dermatology; the heart specialist must not pretend to be a neurologist. Seeing then that no one specialist can understand, still less criticise or check, the work of any other specialist, the attempt to erect a unified science of medicine on the discrete foundations laid by all the "ologists" was simply a modern attempt to build a Tower of Babel; it ended in a similar, inevitable fiasco.

I have been warned that the attempt having been made by the Association with such a result it must be abandoned as hopeless; in my opinion this failure ought to act as a guide and a warning, not as a deterrent. If the position be looked at calmly, surely the conclusion is inevitable, that unless the profession be organised for the purpose, its scientific task must be hampered and delayed indefinitely. The rational way to proceed is to say that the profession must be

organised, and then to discuss how this may best be done. I shall not reargue the question of method, but shall merely say that our scientific knowledge must be collected and systematised on the basis of causation, and not, as was attempted, on the basis of local symptomatology. This is only to insist that our method shall be uniform, and that it shall correspond with the method that has enabled us already to systematise our knowledge of tuberculosis, plague, malaria, phosphorus-poisoning, lead-poisoning, rickets, scurvy, the septic infections, and hosts of other true diseases.

If this fundamental principle be acknowledged, every member of the profession stands on common scientific ground with every other; scientific organisation then not only becomes possible but imperative. It is surely a monstrous thing that the moment a member is "qualified" he goes out to his work in town or country, navy or army, and that it is impossible for him to give or to receive information on the subject at which he spends the rest of his active life.

The remedy is obvious and simple: there must be created a central body of experienced men who shall collect information from the whole profession bearing on the causation of disease; this they will systematise and redistribute regularly to every member of the profession. As soon as our knowledge of any particular disease was definite enough for the purpose, it would be drafted into a permanent shape and also distributed to the profession. In this way the foundation of the ultimate text-book of medicine would be laid; it would represent the accumulated and systematised experience of the whole profession; it would be comprehensive, and would furnish the prac-

titioner, at last, with a complete and reliable book of reference.

Organisation for scientific purposes would inevitably lead further; the acquisition of a common scientific ideal by the whole profession would suggest co-ordination of practical effort. There is an immense amount of knowledge of causation floating about amongst practitioners in an unorganised and therefore unavailable form; if this were collected and systematised, the next generation of practitioners would be much better armed to undertake the prevention of disease, and they would act more in unison. As to the cost of the scientific body suggested, it is only necessary to say here that every member of the profession would pay a substantial annual subscription for his literature, and that the State would also contribute, in return for services rendered.

The disciplinary organisation of the profession is not in a satisfactory state. It is inconceivable, for instance, that any one can go through a qualifying course and fail to realise the utility of the Listerian method in surgery. This method is founded on the study of bacteriology, and vivisection is an integral part of the bacteriologist's work. Yet we have avowed and even demonstrative anti-vivisectionists in the profession. This kind of licence does not pass for toleration with the cranks to whom these people minister; it is undoubtedly interpreted and used as a sign of lack of confidence on our part in our own knowledge.

Other members of the profession make it widely known that they believe they have discovered a panacea in the adoption, or avoidance, of some particular diet. It is inevitable that a certain number of men

out of all our thousands should develop fads that are in direct opposition to the experience of ordinary people: they are perfectly within their rights as citizens, but they ought to be called upon to ride their hobbies as independent individuals; if they are right, the rest of us are hopelessly wrong. There ought to be some rough limit to the degree of divergence of opinion on professional subjects that can with advantage be tolerated; at present there is apparently none.

This leads naturally to the question of how far it is allowable for members of the profession to communicate directly with the public on professional matters; here, again, it is impossible at present to discern the enforcement of any limit. It is a very large subject, and one of vital importance to the public and to the profession; I shall confine myself here to a general and comprehensive suggestion of principle. To begin with, nothing can be effectively done until the profession is completely and compulsorily organised. The more I study modern methods, so much the more am I convinced that the old-fashioned etiquette was right, and that it must be reintroduced. It used to be laid down dogmatically that no member of the regular profession should write or speak in public on the details of professional work; it was held to be detrimental to the interests of both parties concerned. The suggestion of secrecy, of keeping the details of medical investigation for the information of the profession only, will alarm some people. But it must be remembered that the central scientific body would be the servant of the Minister of Health, that their information would all be at his disposal, and that he could call upon them to make public any general knowledge of hygienic matters that was suitable for general information and use. It would be very much

to their advantage if the laity could make up their minds to accept such information, and otherwise to leave the subject of disease and its management alone. The domestic clinical theremometer, the chest of household remedies, and all the books that profess to initiate the amateur into medical and surgical matters, might be deposited with advantage in the dustbin.

We have now arrived at a stage when many medical journals are sold broadcast to the public, and in these journals, physicians, surgeons, and specialists give details and statistics of their methods, their operations, and their cases. Extracts from these journals are quoted freely in the daily press; the daily press even have "medical correspondents" who can supply them with reports and the inevitable "snapshots" of some of the scenes reported from hospital practice. I am quite aware that advertising is still nominally prohibited, but against this we have to reckon with the undisputable fact that the modern medical journal forms a means of direct communication between physicians, surgeons, and specialists on the one hand, and on the other, nervous patients and anxious parents in quest of the speedy cure of symptoms. The publication of works on particular complaints, that are reviewed in the public press and sold to the public, comes under the same head.

The remedy is simple, obvious, and effective. When the central scientific body suggested above has been brought into existence, it will be a rule that every communication on professional matters from any member of the profession shall be submitted to them before being published in any shape whatever. The journal issued by this body will be the only medical journal, and it will be issued to the profession only. There would, of course, be no limit placed on the

right of medical men to form societies for the discussion of any professional subjects; but they would be compelled by law to keep their proceedings from reaching the public directly or indirectly. Every member of the profession will always have ample liberty to tell his own patients whatever he considers right to tell them, but public announcements on professional subjects ought to come through a representative and authoritative body, never through the individual member. We are probably all agreed that the time has come when something must be done; we do not wish to advertise, but circumstances seem, for the moment, to have got the better of us.

Again, as matters stand at present, any particular group of men, or any individual in the profession, may devise and put into execution any method of treatment that commends itself at the moment. There is no authority in the profession, nor, in its present unorganised state, can there be any to which any new method may be submitted; so that all new methods must be judged by each member of the profession for himself, and adopted or rejected on his own responsibility. I shall give one example to illustrate this anomalous state of things.

Some people show a very marked and easily recognised set of symptoms; the symptom-group is called —without any reference to causation—Graves's disease or exophthalmic goitre. Being based purely on symptomatology, this is, of course, an entirely misleading conception, a spurious disease; it is mere self-delusion to imagine that we have made a diagnosis in detecting "Graves's disease." And therefore, when the question of treatment arises, we are driven to adopt empirical methods.

Some men, being "pure surgeons," advocate almost indiscriminate operation, in spite of many casualties. Other men, being "pure physicians," practically condemn "surgical interference" altogether. Their argument—and there seems to be a good deal in it—is that, as the great majority of sufferers either get well, spontaneously, or improve, or at least get no worse; and as hardly any die of this "disease" with proper care, we are not justified in operating. It is obvious that the surgeon can never tell that those he "cures" would not have recovered without operation; whereas all his disasters are to the bad.

Surely it is clear that in such a position the creation of a central scientific body, with at least its tremendous weight of corporate professional opinion behind it, is essential. The first step taken by such an authority would be to order that every case of "Graves's disease" should be closely investigated with a view to elucidating causation and "natural history," and that all results should be sent in for comparison and digestion. This order would go out not only to hospital specialists but to every practitioner. Inside a year, it is safe to say, the profession would have a definite pronouncement on the comparative safety and expediency of the rival methods; and we should be in a fair way to escape from the present condition of deliberate empiricism that the acceptance of illusory diagnosis necessarily perpetuates.

I have purposely chosen an example that is not at all sensational; but it will probably suffice to convince any reasonable person—inside or outside the profession—that the present position ought to be ended by immediate organisation.

The disorganised state of the profession is further well illustrated in the conditions attaching to qualification. We have an amazing number of practically independent bodies authorised to teach, and to grant qualifications; and there is no fixed standard to guide them either as to teaching or as to admission to the profession. The General Medical Council does something in the way of very occasional inspection, but even if it had a fixed standard and wished to enforce it, it has not the authority; the whole business is rather perfunctory. I am not aware that any one disputes the statement, so often repeated, that we require a minimum standard that shall be enforced on all entrants, a one-portal system. It is quite evident, considering all the vested interests at stake, that such a system can only be introduced through State control.

From whatever point of view the question of organisation is looked at, it is evident that before it can be carried out there must be an agreement on the fundamental principles that lie at the basis of the work of the profession. We must make up our minds definitely whether the pure science of medicine is to be more and more minutely subdivided or whether it is to be reunified. On the practical side, it must be made clear to all whether the whole art of medicine must be based on knowledge of causation, or whether it is profitable under any circumstances deliberately to treat symptoms as such. These questions admit of and call for plain and direct answers; until these are forthcoming the ideals and interests of the various branches of the profession must remain antagonistic and irreconcilable; organisation cannot be begun.

XVIII

THE STATE AND THE MEDICAL PROFESSION

It is not necessary to argue that the State should recognise the regular profession as being in sole charge of medicine; not only is this done, but there is already an intimate official connection between the two. There cannot be any doubt that as enlightenment advances the State appreciates more and more that a large and vital part of its responsibility must be borne for it by the medical profession. When the State first realised its duty in supervising and subsidising education, we were told that to make one man pay for the education of another man's children was rank Socialism; we are hearing an echo of this cry already with regard to State subsidies for the work of the medical profession.

I have no notion to enter into a discussion of the rival merits of Socialism—Collectivism—and Individualism; unless our national character can be revolutionised, the triumph of Individualism in these countries is surely inevitable. But whether we like it or no, we are part of the social organism; the health and even the life of the whole of this organism are dependent on the health of every part. Different parts of the social organism perform different functions; the wealthier classes supply the greater part of our thoughts and initiative, the bone and muscle for the carrying out of our projects are supplied entirely

by the poorer classes; failure in either case implies failure for both.

Every nation is faced with many problems; three of them are for us at present vital: national defence, food supply from abroad, and the maintenance of national health. Seeing that we must import vast supplies, national defence and food supply are for us interdependent; and it is evident that if we became a sickly nation we could neither defend nor feed ourselves. These rudimentary facts have been mentioned in order to remind those who have money that the making and keeping of this money is dependent on a sufficient supply of healthy men for farms, factories, mines, navy, and army. It is thus quite evident that if the individual workers cannot maintain themselves in health, both self-interest and self-preservation must urge the State to interfere. A very good beginning has been made by the creation of various central and local authorities for the furtherance of Public Health; what is now required is one authority, a Ministry of Health, for the co-ordination of the work of all those engaged in the preservation of health.

My immediate object is to point out the place that must be taken by the medical profession in this national work, and I shall do so by again referring to the hospital. Individual practitioners are wage-earners, therefore, in accordance with the law of supply and demand, they are drawn in greatest numbers where the highest wages are to be obtained. Where there are the greatest number of elderly, well-to-do people, one finds most practitioners; where there is a great mass of poor people, there are fewest. It would be absurd to blame well-to-do patients for

providing themselves with the advantage of medical attendance, or the practitioners for looking after them; but from the national point of view the situation is unsatisfactory. The nation will not obtain any more work from these elderly people; it must look to the rising generation of our great towns for many of the workers and many of the soldiers and sailors of the future.

And this is where the hospital completely fails; the purely curative suystem in vogue does not supply us with healthy people. Supopsing for a moment that the specialist at out-patient departments do cure every case of phlyctenular ulcer when brought to them, and that they arrest the progress of each case of rickets when first seen, the fact remains that hundreds and thousands of cases of permanently defective vision and permanently distorted frames have already been produced, that reduce the industrial efficiency of the individuals concerned, and destroy their military efficiency.

There cannot be any improvement, as far as the profession is concerned, until the hospital authorities are forced to recognise the plain fact that only in the light of complete knowledge of causation is it possible to prevent disease, to preserve health. There is a steady if slow improvement in the health of great towns, the municipal and sanitary authorities are doing their best, but in the absence of the practitioner they are working to a great extent in the dark.

I have already given my reasons for saying that it is essential that every household in these crowded areas should be under the supervision of a physician, and that his directions must be carried out when necessary by trained nurses; there is no other way of find-

ing out exactly why symptoms develop, and until this is known we cannot deal with causes. The hospital would still receive severe cases and the hospital physician would again become a consulting physician. The cost of such a system, above what would be raised by a graduated levy on the patients, would not be very great, and it would be a very profitable investment for the nation. Those unable to contribute anything would receive just the same attention as the rest; the cost would be borne by the State.

Such a levy could, of course, never be made compulsory. At the same time, it is probable that the advantage of the assistance of the trained nurses, the benefit of treatment at the clinic, and the privilege of free consultations with the hospital staff, both at home and at the out-patient department, would make the State-aided service so popular that the private practitioner would not be required in any hospital area.

The question of extending such a system beyond the areas of the present great hospitals would soon arise. In many poor areas this could be done immediately by attaching clinical medical schools to existing modern Poor Law infirmaries. New hospitals would have to be built in other places, but this will be necessary both for the proper treatment of the inhabitants and to find accommodation for the extra medical practitioners who will require training. Some of our medical schools have already too many students in proportion to their clinical material.

The fact that our slums are not only a disgrace but an absolute danger to the future of the race is universally recognised; all sorts of devices are hit upon to make them habitable,—the anti-tuberculosis campaign is a good example,—but it does not seem to occur to any one that, after all, the preser-

vation of health is the work for which the medical profession exists. This utterly anomalous position will be found on reflection to arise from the erroneous division of medicine—as commonly practised—from so-called preventive medicine, and for this division the craze for specialism, illustrated in the hospital method, is responsible. The medical profession cannot take its place in the front of the movement for the preservation of the nation's health until hospital practice and general practice are assimilated.

The State and the municipalities recognise already that it is their duty to deal with unhealthy conditions in a wholesale manner; what they lack for the guidance of their operations is detailed and full information as to the causes that make our great towns the hotbeds of all sorts of symptoms of disease that are practically unknown in the country a few miles away. This information can be supplied only by those trained in the interpretation of disease, and by them only as a result of constant house-to-house visitation. The central scientific body referred to above would act as a link between individual practitioners and the Ministry of Health, it would organise the knowledge gained by individuals and so make it available for practical application. The cost of all this would no doubt be considerable at the outset, but the nation would reap an immediate return in the increased efficiency of the working population, and it would be a diminishing cost. A few years of co-ordinated, well-directed effort would reduce the volume of disease to be dealt with, and those who had grown up under decent hygienic conditions would not require anything like so much supervision as those born under the present conditions, in which it is hardly worth while to struggle for health.

XIX

DEATH CERTIFICATION

A Select Committee was apppointed in 1898 to inquire into this subject, and its report is very interesting reading. The feature of this report to which I wish to draw particular attention is this: although it is evident that the problem of diagnosis lies at the root of death certification, it was not touched on this inquiry; it was taken for granted that the medical profession attaches a definite value to the solution of this problem. Another supposition must be particularly mentioned: the Committee took for granted that a post-mortem examination was a sufficient means of detecting the cause of death. One of the commonest results of a post-mortem examination is that the pathologist discovers "Bright's disease," and that on the strength of this the jury returns a verdict of "death from natural causes." Such a case illustrates the misleading nature of both the suppositions on which the Committee based its recommendations.

The pathologist who reports "Bright's disease" names only symptoms; he calls cirrhosis of the kidneys "a disease," and we have seen that this cirrhosis may be a symptom of gout, alcoholic poisoning, scarlatina, influenza, fatal chill, lead-poisoning, and so on. It is of course quite impossible for the post-mortem diagnostician to say which of these true diseases was represented in the attack that killed the man. The

pathologist, as we saw, moves in a closed circle of symptoms; it is impossible, in at least ninety-nine cases in every hundred, to determine the cause of death by post-mortem examination alone. The falsity of the other supposition is exposed at the same time; the profession takes for granted, and the public must needs follow, that to say "Bright's disease" is to make a diagnosis, but to say this is merely to label symptoms, and the mere labelling of symptoms never does solve the problem of diagnosis. It is only necessary to give one or two instances to show how grave may be the results of accepting such an illusory diagnosis.

Cirrhosis of the kidneys is sometimes a symptom of lead-poisoning, and cirrhosis of the kidneys is the ground on which the pathologist reports "Bright's disease" as the cause of death. Therefore the coroner and the jury never know whether they may not be returning a verdict of death from natural causes in a case where a skilled poisoner has deliberately shortened life by the careful administration of lead; this is no fancy picture, it is a recital of plain facts. If in another case the pathologist were to report that broken neck was the cause of death, questions would be asked as to the cause of the broken neck; but there is no more information as to the cause of death contained in the report of damaged kidneys than there is in the discovery of a broken neck. There is just as surely a cause behind the one as behind the other; broken neck and damaged kidneys are both of them very good pieces of morbid anatomy, nothing more.

It may be thought that no coroner would rely on the unsupported testimony of the post-mortem diagnostician, but this is not so. One London coroner

habitually dispenses with clinical evidence altogether, he calls in instead his own "special pathologist." The neglected practitioners complained, they appealed to the legal authorities, and they naturally referred the matter to the highest medical authorities. The highest medical authorities are pathologists, so the verdict was inevitable; they decided that the pathologist is the ultimate authority on the question of the cause of death.

When a certificate is given to the effect that a child's death is caused by diarrhœa, we have another example of its being ascribed to symptoms. Such a certificate tells, roughly, how, but gives no hint as to why the child died. If a baby-farmer add a little Epsom salts to the contents of a feeding-bottle, the infant concerned will develop symptoms of diarrhœa; if the treatment be continued it will die. As matters stand at present, the certificate will state that death was "caused" by "diarrhœa"; if the weather be hot the word "summer" may be added, but this, unfortunately, does not make the diagnosis any more informing. Diarrhœa in an infant is a symptom-group, if it is not caused by Epsom salts it is caused by something else; but to say that these or any other symptoms cause death, is merely to throw dust in the eyes of the person receiving the certificate. Many people are returned as dying "of bronchitis"; these symptoms have many different causes in different cases, but they never arise spontaneously, still less do they "cause" death; London fog would certainly be the proper cause to attach in some cases to the symptoms at present labelled bronchitis.

It is needless to multiply examples, the principles underlying true death certification have been fully

discussed already; the whole subject, from the present point of view, may be summed up by saying, that as long as symptoms are officially called "diseases" so long will death certification remain, to a great extent, a solemn and expensive farce. If the reader will turn back to the chapters on true and spurious diseases, he will see that whenever the name of a true disease is given in a certificate the cause of death is of necessity included; whereas, when a spurious disease is named, the cause of death is as inevitably omitted. There is no obscurity about the subject; there is not any difficulty in differentiating the useful certificate from the one that is useless, or worse than useless. Here again the *Nomenclature of Diseases* of the College of Physicians is useful; it gives an excellent indication of the attitude of the medical authorities towards death certification.

XX

QUACK MEDICINE

My object in referring to quackery is to make an opportunity of pointing out the unsuspected but safe manner in which the quack shelters himself under the shadow of regular medicine. All quacks have some well-marked characteristics in common; these may be summed up by saying that they are all deliberate empirics. The deliberate empiric is a person who professes to have found some means or method of cure that enables those in possession of the secret of the system to deal successfully with manifestations of disease without previously studying the causation.

The homœopathist stands in a different position from other quacks; he is half in the profession and half out of it, in a way that is beyond the comprehension of the plain practitioner; it is arranged by the General Medical Council on some plan of its own. But he is none the less a quack; his practice is based on "the great scientific principle of *similia similibus curantur.*" When the homœopathist says that like cures like, he cannot possibly refer to anything but symptoms, and their cure by drugs; this is the very definition of quackery.

The practice of the regular profession is still riddled with empiricism, unrecognised; and until it is purged of this, the line between regular and irregular practice cannot possibly be drawn so that the public shall recognise it. The hospital physician gives iron

for the cure of anæmia without inquiring into the causation of these symptoms; this is no doubt unwitting, but none the less pure empiricism. He does not in the least improve his position by calling the symptoms "chlorosis," the labelling of symptoms does not solve the problem of diagnosis. The physician gives a mixture for the cure of bronchitis; he names the symptoms and he treats them without reference to the cause. When the physician treats myxœdema with thyroid extract he is still an empiric; every practitioner knows some of the causes of myxœdema, but the physician will have nothing to do with them; he teaches the student dogmatically to "spot" myxœdema at sight and to administer thyroid. I have never known a physician mention the causation of myxœdema, nor listen to any one who wished to do so.

The rhinologist who professes to cure asthma—of unknown and unsought causation—by cauterising the inside of the nose is an empiric, for the moment. The otologist who treats deafness with hypodermic injections of pilocarpin, without inquiry into causation, is the same; so is the ophthalmologist who "diagnoses" glaucoma and treats it, while ignorant of causation, by operation. The mere mention of lumbago, sciatica, uric acid, gout, colitis, neuritis, rheumatism (not rheumatic fever), brain-fag, obesity, neurasthenia, suggests an amount of empiricism inside the profession that is positively appalling. The hydropathist, the balneologist, the spa-specialist, the galvanopeutist, the specialist in massage, the climatologist, and others, deal with sufferers from these symptoms, falsely called diseases, on systems that are almost wholly empirical.

The difference between the hospital physician who gives a cough mixture for bronchitis and the quack who advertises one is very palpable; the quack omits even the suggestion of an attempt at individual diagnosis and deals with his dupes wholesale. Now, if the physician's diagnosis were genuine the distinction would be sharp and unmistakable; but when the physician's diagnosis is illusory, the distinction partly fails. It is an ugly truth, but as long as the physician pretends to have made a diagnosis, to have traced the causation of the symptoms present, by uttering the words "bronchitis," "Bright's disease," "infantile paralysis," "myxœdema," "gastric ulcer," "chlorosis," "sciatica," "neuritis," and hosts of others, so long will he remain an empiric. And while the representative physician remains an empiric, the public cannot be altogether blamed for patronising the quack. If the physician "diagnoses" gout, neuritis, colitis, and proceeds to treat people on the strength of this "information," is the patient to be blamed for trying some rival remedy next time, even if it be the property of a quack?

Whatever the case of individuals may be, it is clear to the onlooker that the time has come when the profession, as a whole, has everything to gain and nothing to lose by taking the public candidly into its confidence, as in the case of cancer, and putting the relation of science and art in medicine openly on a right footing. Not only would this cripple if not kill quackery, but it would establish a state of confidence between the profession and the public that is at present sadly lacking.

XXI

SUMMARY

Long before man appeared on the earth, animals lower down in the scale of evolution were afflicted with disease, and made unreasoned attempts to escape the consequent discomforts. Arising thus naturally, medicine has advanced with the higher development of human intelligence. Amongst primitive races, medicine is combined with theology; these people ascribe disease to supernatural interference and try to deal with it accordingly. In civilised countries it is recognised that disease arises from natural causes, and medicine thenceforth falls into two distinct parts, a pure science and an applied science or art. We pursue the pure science in order to gain knowledge of causation, and in the art that follows we apply this knowledge for the preservation of health by the prevention and cure of disease.

It is essential that those who interpret and deal with the processes of disease shall have a clear understanding as to the meanings attached to the word "disease." It is used sometimes in a general, negative sense, merely to denote a deficiency of health; just as cold is made to denote a deficiency of heat. But when we specify "the disease" from an attack of which a patient is suffering, the word is used in the particular, positive sense. When reference is made to a specific disease, when we speak of "a disease" or "the disease," we have in mind a summing-up of ex-

periences in the shape of an abstract, or mental conception. Every specific disease is derived from the observation of a series of cases presenting symptom-groups of determinate and similar causation.

There is no other natural and common basis but causation on which we can define our conception of the specific diseases, and the basis of classification must correspond with the basis of definition. All diseases fall naturally into two primary divisions; in the first are all those diseases in which the cause arises in the environment of the patient. These diseases of extrinsic causation fall into three main groups under the heads of parasitism, poisoning, and traumatism. In the second primary division are all those diseases in which the cause arises in the patient's constitution. These diseases of intrinsic causation fall into five groups, under the heads of incomplete development, constitutional defects, overwork, deficient work, and wear and tear.

To diagnose means, to specify the disease from an attack of which a patient is suffering; in other words, to identify the case as belonging to a known series. Every disease that gives its name to such a series represents correlated cause and effect; therefore, to diagnose means to correlate cause and effect in each case.

Diagnosis does not complete our knowledge of causation; in order to do this we must also elucidate the conditions that lead to the individual attack.

The object aimed at in all branches of the art of medicine is the preservation of health; this may be attained by the prevention of disease, supplemented when necessary by cure. Cure can be consistently carried out only when the cause of the symptoms to

be dealt with is known, and prevention is possible only when a full knowledge of causation has been gained. The true relation of theory and practice in medicine can therefore be maintained only by giving invariable precedence to science.

The old custom of deriving our conceptions of specific diseases from the observation of recurrent symptom-groups that have not been correlated with their cause still persists; and so it happens that there are vastly more spurious diseases than true in our text-books of medicine. Every true disease represents a series of symptom-groups always correlated with one cause; every spurious disease represents a series of symptom-groups that are not of determinate and similar causation.

When, therefore, the physician recognises an individual attack as belonging to a series of symptom-groups of indeterminate causation, he has not traced effect to cause, he has made an illusory diagnosis. The art that is founded on such pseudo-science must of necessity be empirical; random cure may occasionally be effected, but in the absence of a full knowledge of causation prevention is impossible. Lacking the power of prevention, the end and object of medicine, the preservation of health, is out of reach.

The "pure physician," the teacher and consultant of our times, has substituted morbid anatomy, under the name of "scientific pathology," for the science of medicine. He has, as a result, evolved a number of "organic diseases"; these are spurious diseases, for they represent series of symptom-groups that are not of determinate and similar causation. The pathologist-physician has consequently developed in practice into a specialist in "the diseases" of heart, of lungs,

of nerves, of stomach, and so on; he no longer attempts to make a complete survey of medicine, he treats symptoms, not the patient.

It is right and necessary to set apart a few men, under the exceptional conditions of the hospital and the school, who shall cultivate the art of operating; they become experts in this branch of our art. But the attempt to practise "surgery" that is not founded on and subordinated to the science of medicine is disastrous in its results. The beneficent revolution that has followed Lord Lister's diagnosis of septic cases is enough to prove this.

The specialist bases his claim to eminence on a perfect knowledge of some particular group of "diseases," such as those of skin, nose, eye, ear, or throat; but all such "diseases" are spurious; they are created by labelling symptoms without any reference to causation. All specialists indulge freely in illusory diagnosis, with the inevitable result that their practice is, in the main, purely empirical.

Physicians, surgeons, and specialists at the hospital work in an artificial atmosphere; they deal only with sick and wounded, and are therefore limited in their practice to cure or alleviation; they do not concern themselves with prevention. They exempt themselves, in the vast majority of cases, from the attempt to trace the causation of symptoms; they label them and at once proceed to cure. When symptoms are thus labelled, division of labour for purposes of cure becomes simple. The practitioner who has to take all cases as they come and do his best is obliged to follow the example of the physician of fifty years ago, and to study the whole range of disease; he cannot be a "pathologist" and he must not be a specialist.

The hospital stands in a densely populated and unhealthy area; the staff undertake responsibility for the health of the people living there, without the intervention of the practitioner; patients come to physicians and specialists, not for consultation but for cure. Even if every possible allowance be made for the benefit these people derive from the cure of symptoms, the fact remains that no attempt is made by the hospital staff to deal with the causes of these symptoms. As far as the hospital is concerned the causes that are operating in the slums go on, not only unchecked but undiscovered, unsought; the constitution of their patients may be built up or broken down by their surroundings, it is not taken into account.

If it be true that prevention is better than cure, and that it is only possible to exercise prevention by gaining a full knowledge of causation, the hospital system stands condemned and must be remodelled. It is impossible for the members of the staff to gain a first-hand knowledge of the constitution and environment of each patient; this essential work must be delegated to practitioners resident in the district and in touch with the hospital. Causes will then be dealt with instead of effects; disease will be attacked at the source.

The reform of medical education and the reform of the hospital system are two aspects of one question. When illusory diagnosis and the consequent empirical methods disappear from the hospital, the future family physician will meet a teaching physician with scientific and practical ideals like his own; "specialism" will disappear.

The medical profession lacks even the pretence of complete scientific organisation; this is a result of a

lack of agreement on fundamental principles; until this is reached, organisation is not possible.

The relation of the State with the medical profession stands in need of complete revision; especially as regards concerted action for the preservation of the health of the people in great towns.

As long as spurious diseases are given official recognition, that is, as long as symptoms are allowed to pass for specific diseases, there cannot be any certainty whether a certificate gives the cause of death or no. Every one giving a death certificate ought to be obliged either to give the cause of death, or to state plainly that this has not been done.

THE END

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